DOCUMENT RESUME

ED 434 452 EC 307 450

TITLE	Assistive Technology Creating a Pathway: Iowa Assistive Technology Guidebook. Field Edition.
INSTITUTION	Iowa State Dept. of Education, Des Moines.
PUB DATE	1998-09-00
NOTE	146p.
PUB TYPE	Guides - Non-Classroom (055)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	*Assistive Devices (for Disabled); Delivery Systems; *Disabilities; Early Childhood Education; Elementary Secondary Education; *Individualized Education Programs; Program Development; Services; *Technological Advancement; Transitional Programs
IDENTIFIERS	Iowa

ABSTRACT

This manual is a guide to the use of assistive technology with Iowa students who have disabilities. Section 1 offers legal definitions and examples of assistive technology and is followed by a section that considers how assistive technology helps students by providing examples of assistive technology in the general education curriculum. Section 3 is on assistive technology and the Individualized Education Program (IEP) including specific guidelines and examples for answering the assistive technology question on the IEP form. The next three sections provide guidance about building assistive technology capacity at the district level; transition and assistive technology; and funding, purchasing, and maintaining assistive technology. Section 7 answers frequently asked questions concerning service delivery, responsibility/legal issues, and funding. Section 8 offers resources including frequently used forms, definitions and lists of Web sites and organizations. Eight appendices provide additional resources such as examples of assistive technology devices, an accommodations checklist, a flowchart on addressing assistive technology in the IEP, sample letters, Iowa Department of Education requirements for accessible software design, and an assistive technology intervention matrix. (DB)

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Assistive Technology

Creating a Pathway

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Field Edition
September 1998

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Assistive Technology
Creating a Pathway

Iowa Assistive Technology Guidebook

Field Edition
September 1998

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Preface & Acknowledgments

This document is the result of the work of a writing team appointed by the overall group of Iowa Area Education Agency Assistive Technology Liaisons. Appreciation and thanks are extended to this group of people for their hard work and tireless efforts:

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The work of this group was guided by certain beliefs about the importance of student outcomes and assistive technology. These beliefs are shared below to give a clear picture of the driving force behind this manual. It is hoped that these beliefs will guide IEP teams and school districts as they make assistive technology decisions for children.

Beliefs

Assistive technology is available to all students who require it in order to receive an appropriate educational program.

Assistive technology increases student opportunities for education, integration, social interactions, and potential for meaningful employment.

Assistive technology increases student participation in learning experiences.

As students grow and develop, assistive technology remains appropriate and relevant.

The assistive technology decision-making process works when families, students, and educators participate.

Recommendations for assistive technology are based on student needs.

Interagency cooperation enables students to access assistive technology devices and services across all appropriate environments.

Planning and coordination ensures appropriate transitioning of assistive technology devices and services for students.

To meet the needs of students requiring assistive technology, on-going staff development is necessary.

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Section I

What is assistive technology?

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Section I
What is assistive technology?

Assistive technology enables children with disabilities to participate more fully in all aspects of life (home, school, and community) and helps them access their right to a "free, appropriate, public education" (FAPE) in the "least restrictive environment" (LRE). Although assistive technology is a "tool" or set of "tools" that assists students to benefit from the general education curriculum, it is not solely devices or services. It may also take the form of adaptations or modifications. Because assistive technology takes many different forms, it looks different from student to student. In fact, the provision of assistive technology must be individualized for each student.

In legal terms, an assistive technology device is defined as:

> any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability.
> *IDEA, Title 34 CFR, Sec. 300.5*

and an assistive technology service is defined as:

> any service that directly assists an individual with a disability in the selection, acquisition, or use of an assistive technology device. Specifically this service includes:
>
> 1. Evaluation of the technology needs of the individual, including a functional evaluation which takes into account all of the environments within which the individual functions.
> 2. Loaning or leasing, writing prescriptions for third party insurance or Title XIX payment in conjunction with the individual's physician, or direct purchase of assistive technology devices for individuals with disabilities.
> 3. Selecting, designing, fitting/customizing, adapting, applying/maintaining, repairing, or replacing of assistive technology devices.

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4. Coordinating and using other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs.
5. Assistive technology training and technical assistance with assistive technology for an individual with a disability, or, where appropriate, the family of an individual with disabilities.
6. Training or technical assistance for professionals, employers, or other individuals who provide services to, employ, or otherwise are substantially involved in the major life functions of individuals with disabilities.

IDEA, Title 34 CFR, Sec. 300.6

The following list provides some "educational" examples representing both the low technology-end and the high technology-end of the spectrum of assistive technology:

Handwriting– raised lined paper; pencil grip; expanded keyboard; templates of letters and/or words; font software for teacher designed materials

Spelling– templates for three choice or "letter missing" spelling lists; spell checker; portable computer such as DreamWriter or AlphaSmart; typewriter

Reading– books on tape; screen reading software; picture/print stories; line marker; highlighter

Math– calculator with large numbers, printout or talking capabilities; number line; touch point numbers; manipulatives; enlarged copy of problems

Written expression– dictation; story organizers; word prediction software; electronic dictionary

Daily organization– schedule; picture schedule; electronic memo minder; folder organizers

Communication– pictures; topic boards; objects; signing; voice output communication devices such as the BIGmack, Cheap Talk, Dynavox

Mobility– walkers; wheelchairs; splints; ramps; visual cues such as taped line on floor; automatic door opener

Recreation– crayon grips; switch adapted toys or tape recorder; switch activated camera; three wheeled bike

Seating/positioning– arm chair; bean bag chair; wrist support; desk easel; foot rest

Seeing– large screen monitor; preferential seating; high contrast materials; modified print; audio materials

Selfcare– button fastener; coat hook or locker the student can reach; handrail

Levels of independence– picture/print schedule; assignment book; study guide; alarm watch; voice recorder/ memo minder

Cognitive processing– curriculum-topic matched software to complement student's cognitive processing; organizational materials

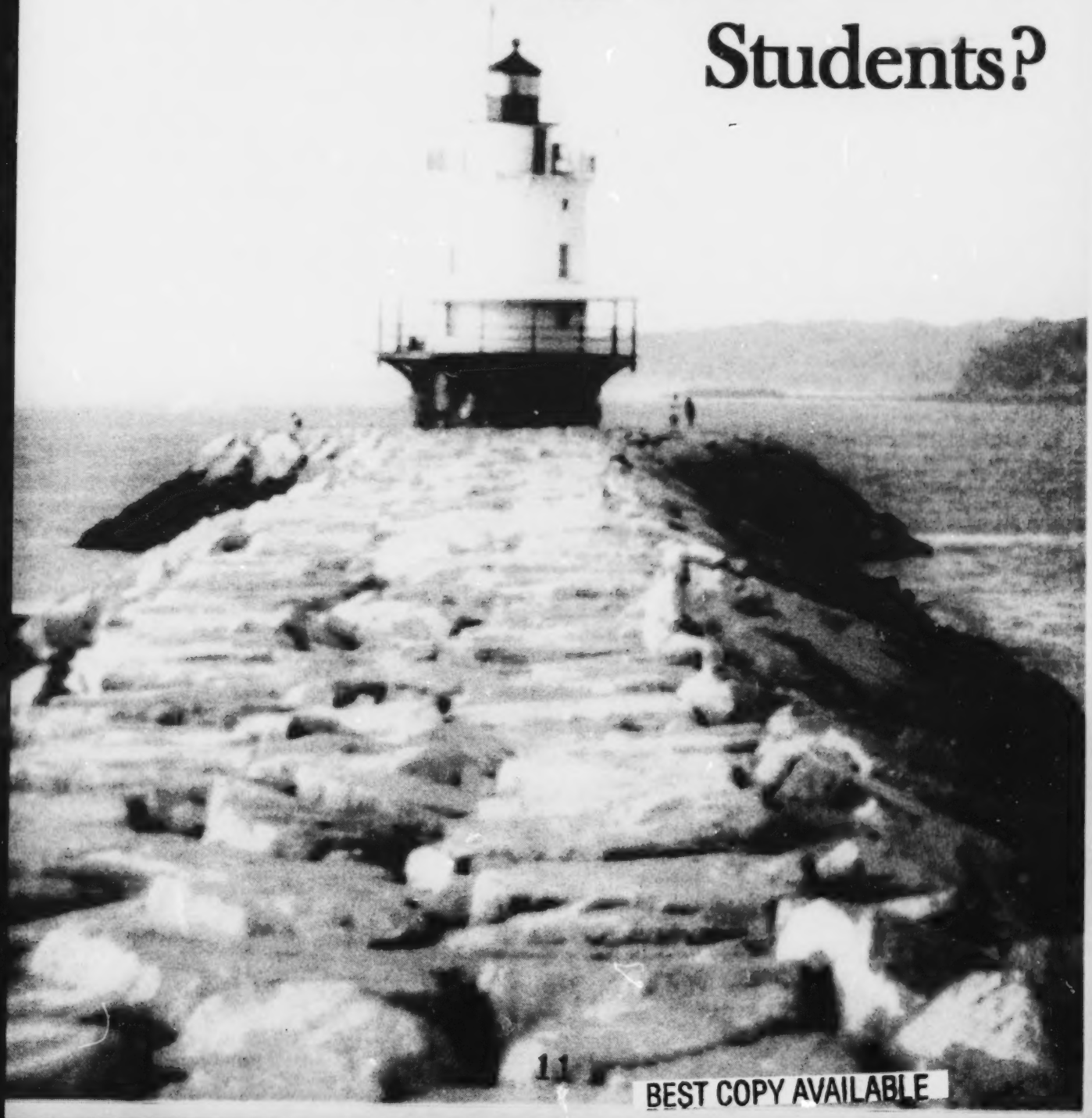
Hearing– sign language; auditory trainer; TTY; closed captioning; hearing aids

A more comprehensive list of assistive technology can be found in Appendix A of this guidebook.

Notes:

Section II

How is Assistive Technology Relevant to Students?



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Section II
How is Assistive Technology Relevant to Students?

Effective July 1, 1998, per the Individuals with Disabilities Education Act (IDEA), assistive technology is included as a consideration in the development of Individualized Education Programs (IEP) for **all** students determined eligible for and in need of special education services. IDEA also requires each school district to ensure that assistive technology devices or services, or both, are made available to a student with an identified disability, in order to receive a free and appropriate public education (FAPE). If assistive technology services and devices are required for a student to receive FAPE, they must be provided as a part of the student's special education; related services; or supplementary aids and services as described in the IEP.

Notes:

Assistive technology is used to help a wide variety of students participate in all areas of school life. School life for all students can be divided into different categories: school routines, content classes, elective classes and school sponsored events. Within these different categories, assistive technology may appear in the form of services, devices, or modifications that enable a student to benefit from and participate in school life.

School routines vary from setting to setting and grade level to grade level. Some of these routines include arrival, departure, opening activities, lunch break, recess, and passing from class to class. In order to begin thinking about the needs of specific students, the IEP team needs to consider the following questions, "Is this student able to get into, move about, and leave the school independently? What barriers exist for this student and how can those barriers be overcome?" When attempting to meet a student's need for assistive technology in these routines, consideration should be given to changing the physical arrangement of the setting, providing different materials, or having someone assist the student in the activity. Perhaps a door handle of a different shape, an automatic door opener, or

Notes:

a peer to meet the student at the door will help the student move about the school. A photo sequence of landmarks may help a student recognize the route from the bus to the gymnasium or locker. Alternate playground materials are another way to help increase student participation, e.g. providing a student with a lighter weight ball or a larger target. Modifying assignments to include the materials needed for each class may help a student organize tasks.

Content classes are required for students to graduate. Reading, writing, and/or math are at the root of all content classes. When considering assistive technology needs in these areas, educators should explore ways to help a student do the necessary tasks more effectively. Some examples:

A) A student who demonstrates an understanding of science during discussions, but cannot keep up with the reading assignments, might be able to do the class work independently if the reading materials are provided on tape.

B) A student who has good ideas for creative writing, but cannot write legibly, might be able to complete a writing assignment for a composition class using a computer with special software.

C) A student who understands math concepts, but has difficulty copying the algebra problems onto paper, might succeed if allowed to use graph paper to better see the problems.

Whatever the difficulty, IEP team members need to consider the following question:

"What modifications are needed for this student to demonstrate his or her grasp of the concepts being taught?"

In some cases, the actual **information** the student is expected to learn will need modification. Frequently the change that would prove most helpful involves modifying **how** the student receives the information or **how** the student is to provide feedback to the teacher about the information. A checklist of some suggested accommodations can be found in Appendix B.

Elective classes are exploratory in nature. These classes allow students to explore many fields with which they may be unfamiliar. The goal of assistive technology in these classes is to promote the student's effective participation in the class. The following are some specific examples of how a student might be able to participate in an otherwise inaccessible activity:

A) A graphics or drawing program on a computer in art class might be substituted for charcoal work or pencil sketching.

B) A curriculum requirement to learn the basic food groups could be met by using alternate reading materials. Instead of the standard text materials, materials with an easier reading level or picture cues such as the food pyramid could be used.

School sponsored events include sporting events, assemblies, clubs, dances, concerts, field trips, and other similar activities. These events require school staff to think ahead about how a student with disabilities might participate. An interpreter could be made available at the school play for a student with a hearing impairment. A ramp could be used to make the entrance to the building where the wrestling meet is being held wheelchair accessible. Software could be acquired that would enable a student participating in yearbook to process photos.

The following matrices and the matrix found in Appendix H are designed to help the IEP team begin to think about what assistive technology is, how it might look in general education and to identify assistive technology already in place. They are not designed to include all of the possibilities, but are meant to provide an expanded perspective to help the IEP team begin thinking of different ways to address the needs of students.

Notes:

Examples of Assistive Technology in the General Education Curriculum

Category of School Life Activity	Specific Activity	Assistive Technology		
		Modification	**Device**	**Service**
School Routines	**Arrival/ Departure**	• covered area to entrance • later arrival/departure • earlier arrival/departure	• automatic door opener • picture cue cards or object to help student transition, e.g. picture of the bus	• pick up at home • drop off at school door nearest classroom
	Lunch	• preferential seating (i.e., corner table) • longer time to eat	• adapted utensil • sectioned plate	• special diet provided • tray delivered and/or picked up
	Recess	• alternate setting with peer • shorter/longer time	• swing with back • light weight ball	• exemption from lining up
	Passing Classes	• longer/alternate time	• planner with picture sequence cues	• escort
	Use of Assignment Book	• larger writing area • personalized arrangement of assignment book	• memo mate voice recorder	• teacher provides assignment on NCR paper
	Daily Organization	• pocket schedule • schedule on desk • structured study guides • color coded schedule to match class folders	• Post-It notes • colored paperclips • electronic pocket organizer • organizational software	• peer support

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Examples of Assistive Technology in the General Education Curriculum

Category of School Life Activity	Specific Activity	Assistive Technology		
		Modification	**Device**	**Service**
Content Classes	**Reading**	• use story frame • structured study guide • simplified text • shorten assignment	• page magnifier • highlighter tape • talking dictionary • scanner for text • voice output device to read aloud or respond orally	• "Books on Tape" • trained reader
	Writing Mechanics	• adapt worksheets so they are fill-in-the-blank, multiple choice or True/False • easel to change angle	• pencil grip/holder • different paper • typewriter • alternate keyboard	• dictated material typed
	Written Expression	• provide key words • "webbing" strategy • extra time to write • formula composition	• word cards • software that speaks • word prediction software • spell checker	• peer support • access to computer in each class
	Math	• reduce number of problems • use manipulatives • use personal chalkboard • cue "process" by highlighting	• number line • magnetic numbers • facts charts • calculator	• eliminate need to copy problem • enlarge worksheets • tutor to write or assist practice

Examples of Assistive Technology in the General Education Curriculum

Category of School Life Activity	Specific Activity	Assistive Technology		
		Modification	**Device**	**Service**
Elective Classes	**Art**	• space for desk easel • alternate assignment such as writing or dictating a paper on visual perspective • alternate material, e.g. beads for a jewelry project	• pencil/marker caddy • graphic/drawing software • electric scissors	• peer to gather materials • partner for activities
	Home Economics	• simplified reading material • taped instructions	• adapted cooking utensils • talking word processor • voice output device to announce instructions	• peer partner
	Physical Education	• alternate outcome for activity • visual cues for tasks	• lower basketball hoop • alternate ball • protective headgear	• additional space to participate • extra time to complete
	Media	• large print materials • auditory materials	• computer assisted reader • electronic encyclopedia	• trained personnel for devices

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Examples of Assistive Technology in the General Education Curriculum

Category of School Life Activity	Specific Activity	Assistive Technology		
		Modification	**Device**	**Service**
School Sponsored Events	**Concert**	• side entrance to stage • preferential seating	• adapted musical instrument • tray top music stand • magnification system	• lighting to accommodate visual needs • role for student in concert that matches his/her ability
	Sports	• alternate assignment (timer, score keeper, statistician, information person to media)	• digital stopwatch • large print stop watch • adapted sports equipment (i.e., bowling ramp or bumpers)	• clear line of sight to event
	Field Trip	• signs in symbol and print • appropriate transportation	• signal device • emergency communication board or system	• "scout" to locate needed services • accessible services
	Theater	• preferential seating • accessible stage	• distance vision device • voice output device for speaking part	• interpreter • role for student which accommodates skills, e.g. a student with speech or mobility limitations could possibly do publicity or run lighting for the production

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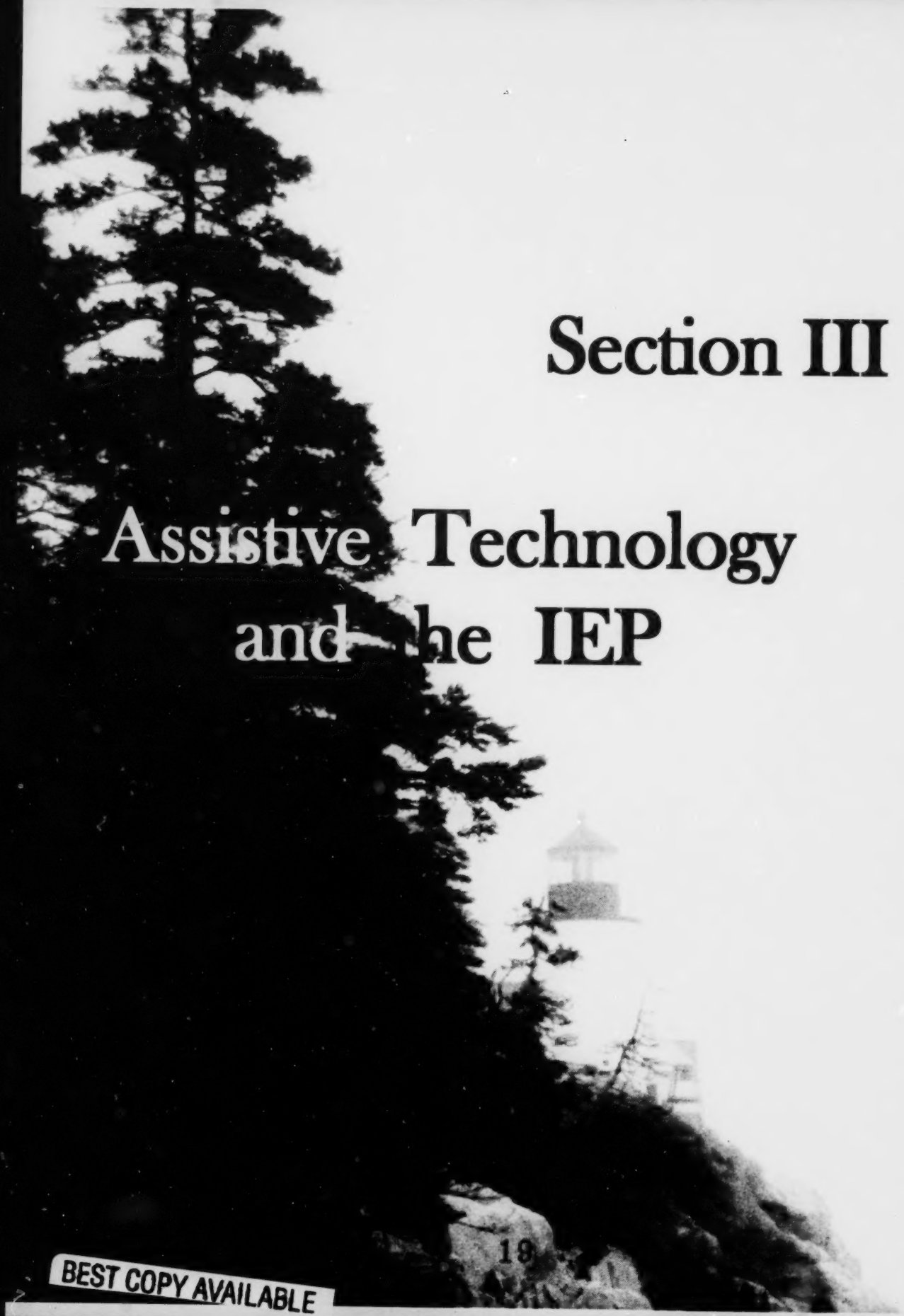

Section III

Assistive Technology and the IEP

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Section III
Assistive Technology and the IEP

How does the IEP team answer the assistive technology question on the IEP form?

As a part of IDEA 97, the IEP process must include the consideration of assistive technology for all students eligible for special education services. Iowa's state IEP form addresses this consideration by asking a two-part question regarding assistive technology. The question appears on page 9 of the IEP form (found in Appendix D) as follows :

( ) Yes ( ) No **Are assistive technology services or devices required? If yes, describe in appropriate section(s).**

The IEP team is responsible for determining if assistive technology devices or services should be provided. They may use whatever resources are necessary and available to make an informed decision.

In this section, two models are presented to help guide the IEP team as they try to answer the assistive technology question on the IEP form. These models are meant to complement one another and could be used in conjunction with one another.

Model #1

The first model is called the **SETT** framework. This model is a frequently used organizational tool developed by Joy Zabala, Educational Specialist, Region IV, Education Service Center, Houston, TX.

Notes:

Notes:

Zabala's process involves gathering information about the following:

- The **S**tudent.
- The **E**nvironment.
- The **T**asks required for active participation in the activities of the environment.
- The **T**ools needed for the student to address the tasks.

A number of questions need to be asked in each of these areas as the IEP team considers assistive technology for a student:

The Student:

- What does the student need to do?
- What are the student's special needs?
- What are the student's current abilities?

The Environment:

- What materials and equipment are currently available in the environment where the student functions?
- What is the physical arrangement?
- Are there special concerns?
- What is the instructional context?
- Are there likely to be changes in instructional context?
- What supports are already available to the student?
- What resources are available to those supporting the student?

The Tasks:

- What activities take place in the environment?
- What activities support the student's curriculum?
- What are the critical elements of the activities?
- How might the activities be modified to accommodate the student's special needs?
- How might technology support the student's active participation in those activities?

The Tools:

- What no-tech, low-tech, and high-tech options should be considered when developing a system for a student with these needs and abilities doing these tasks in these environments?
- What strategies might be used to invite increased student performance?
- How might these tools be tried with the student in the customary environments in which they will be used?

Notes:

Model #2

The second model for considering assistive technology for students is based on the work of A. C. Chambers, *Considering Assistive Technology: A Flowchart of Primary Questions.* A detailed description of the step-by-step process is provided in this section. The flowchart itself can be found in Appendix C of this document.

Step #1 **ASK, "What is it we want the student to be able to do within the educational program, that he or she isn't able to do because of his or her disability?"**

The IEP team needs to consider carefully what they want the student to be able to do within the educational program, that he or she isn't able to do because of the identified disability. Then the IEP team needs to ask the question, "Would assistive technology of some kind enable the student to meet his or her goals?" Recognizing the broad nature of assistive technology, the team should answer this question keeping in mind short and long term goals as well as district standards and benchmarks.

Potential areas of need that could be addressed with assistive technology and should be considered by the IEP team, include but are not limited to:

- Handwriting
- Spelling
- Reading
- Math

Notes:

- Written expression
- Daily organization
- Communication
- Mobility
- Recreation
- Seating/positioning
- Seeing
- Selfcare
- Levels of independence
- Cognitive processing

Proceed to Step #2.

Step #2 ASK, "What has been tried to meet the student's special education needs?"

Once the IEP team has identified the areas of educational need, it is necessary for them to look at what has been tried in order to address the need(s) of the student. A variety of interventions achieved through strategies or modifications not typically considered "assistive technology" may have been tried. These strategies may be no-tech, low-tech or high-tech in nature.

Example: A student with a learning disability, unable to memorize multiplication facts, may use a multiplication table. The multiplication table could be identified as a modification in the general education environment. An assistive technology device, such as a calculator (identified as a low-tech device), could also be used to meet the student's need. See Appendix E for some suggested forms that may help the IEP team address this question.

Proceed to Step #3.

Step #3 ASK, "Is it working?"

After identifying the strategies, modifications and devices, currently being used to help address the educational need, the IEP team should determine if they are effective. To address the question of effectiveness, the IEP team could ask the following:

Is the strategy, modification or device:

- meeting the student's specific need in the environments where he or she needs to complete the task?
- meeting the student's specific need to the level of desired independence?
- providing the student with the least restrictive environment (LRE) where he or she is able to receive FAPE?

Yes, it is working.
ACTION:
Provide documentation and evidence to support this conclusion.

If the team agrees the specified educational needs are being met, within the LRE, and the student's programming is appropriate with the strategies, modifications and/or devices in place, to the level of independence desired, there should be evidence to support the effectiveness and appropriateness of the interventions.

Evidence may be provided by anyone from home or school, who is involved in the student's education. This evidence may be in the form of:

- Work samples
- Classroom tests
- Formal testing
- Recorded observations
- Video taping
- Any other form appropriate to the student and his or her needs

Advance to Step #7 on page 37.

No, it is not working.
ACTION:
Proceed to Step #4 on page 32.

Notes:

Notes:

Step #4 **ASK, "What was tried? How long was it tried? How was it tried? What were the results?"**

What was the strategy, device, or modification that was tried? If there was more than one, the IEP team should address each one separately.

The IEP team should document the time frame or time period for which the strategy, device or modification was tried and indicate if there were any "breaks" in service that may have affected the outcome or progress.

Next, the IEP team should provide information and descriptions about how each strategy, modification or device was used and indicate the initially anticipated outcome. If there were specific procedures, devices or assigned responsibilities, these should also be indicated.

The IEP team should note actual outcomes or results and indicate what did not work and what did work. It would help to be as specific as possible about what did and did not work, and what may have been procedurally ineffective, device-specific ineffective or individually ineffective.

Are there implications regarding further strategies, modifications or devices the IEP team should consider to help the student achieve his or her goals? Information and data collected from this step should be used in considering alternative interventions.

Proceed to Step #5.

Step #5 **ASK, "Do we, as the IEP team, have the necessary knowledge and resources to continue to try and meet the student's special education need(s)?"**

After efforts have been made to attempt modifications, apply strategies, and/or use assistive services or devices, and it appears the IEP team's efforts are not bringing about the desired change, they should determine a course of action.

By asking the question in Step #5, the IEP team can determine whether they can continue to brainstorm and come up with

strategies on their own, whether there are more resources that can be tapped, or whether it is time to consider advice or assistance from an outside source.

Notes:

No, we do not have the necessary knowledge and resources to continue to try and meet the student's special education needs.
ACTION:
Seek additional assistance.

The IEP team is not expected to know everything about every possible assistive technology service or device. Individual variables in the system as well as the background disciplines of the team members will impact the decision at this point. There are varying degrees of training, experience, and accessibility to devices which may limit the capabilities of an IEP team in relation to the needs of a specific child. There also may be other resources within the school building or school district the IEP team may want to use.

After the IEP team has decided to seek additional assistance, they should consider completing a referral to the Area Education Agency Assistive Technology Team (AEA AT-Team). As a result of a referral, questions will be brought to the attention of the AT-Team and the AT-Team will consult with the IEP team to generate recommendations.

As a result of information provided by the IEP team's source of additional assistance, **proceed to Step #6 on page 34.**

Yes, we do have the necessary knowledge and resources to continue to try and meet the student's special education needs.
ACTION:
Develop a plan of action to meet the specific needs of the student.

If the IEP team members agree they have not exhausted their own knowledge base and resources, they need to develop a plan of action to meet the specific need(s) of the student. Based on what has been tried, they should decide on alternative intervention strategies, services, devices, or modifications to interventions already in place.

Proceed to step #6 on page 34.

Notes:

Step #6 **ASK, "What will be tried? Under what conditions will it be tried? In what environment will it be tried? What is the criteria for determining whether or not the need is being met?"**

Assistive technology needs vary for each student. The criteria for determining the effectiveness of assistive technology will also be unique to each student, depending on the desired goal. The goals for each student should consider:

- Increased independence
- Task mastery
- Rate at which a task is accomplished
- Stamina to accomplish task(s)
- Accuracy
- Attentiveness
- Increased interactions
- Other child-specific criteria

As with any IEP consideration, goals which are addressed using assistive technology depend on the individual needs of the student and must be determined on a case by case basis. The service or device is related to, or integrated into the goal or short-term objectives, but it is the student's need, not the service or device that drives the decisions.

In determining the specific assistive technology needs of students, it is important for the IEP team to make informed decisions regarding the appropriateness of assistive technology devices and services. Matching the student to a specific assistive technology device or system is a process that requires careful consideration.

When considering assistive technology, evaluation results assist the IEP team in identifying specific assistive technology needs, based on the individual needs of the student. Evaluations may be conducted at the local level if the IEP team has the necessary knowledge and experience regarding assistive technology services and devices. Consultation or evaluation by the AEA assistive technology services staff may be necessary to determine what is needed for a student. It is essential to use a process that will result in a good match between a student and a device.

A review of available devices should be a part of any device-to-student matching process. Systems or devices should be evaluated, their use should be planned and a trial should be conducted before a system is recommended. A thorough assessment of the student's needs, skills, preferences, present abilities, and preferred outcomes should be a part of this process.

It is important for the IEP team to evaluate devices according to several criteria during the selection process. These criteria should be a part of every recommendation for an assistive technology device or system:

Safety:	Consistently safe for use by student and care-takers across environments.
Performance:	Effectiveness, reliability, durability, comfort.
Ease of Use:	Access, ease of set-up, learning to use, operate, maintain, repair.
Aesthetics:	Attractive, well-designed, size appropriate.
Cost:	Training costs, accessories needed, alternative systems available. Cost is a consideration but not a determinant.
Convenience:	Ease of storage and transport.
Flexibility:	Compatibility with other devices, expandability, ability to be updated and/or upgraded.
Maintenance:	Warranty, return/repair policies, and technical support available.
Liability:	Insurance coverage, liability risks.

Student related issues need to be considered when determining the need for and the appropriateness of assistive technology devices and services. Some of those issues are:

- Is the student able and willing to accept the technology recommended?
- What is the student's involvement and what are his or her expectations?
- Will the device be acceptable in the student's social and cultural environment?
- What are the time requirements for training, preparation, support and adjustments?
- Does the prescribed assistive technology move the student toward specific goals?

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Family and educational personnel concerns should also be addressed in the evaluation and decision-making process regarding assistive technology. The following are some specific questions for consideration:

- What is the clarified purpose of the technology?
- Is there reasonable assurance that the recommended device or system will address the specific needs of the student?
- Will the technology be accepted?
- What are the physical, emotional, and social implications associated with using the technology?
- What amount of support and involvement is required?
- Is the technology manageable?

All individuals involved in the selection and effective application of an assistive technology device or system need to understand the purpose behind a recommendation. The discussion regarding a recommendation for assistive technology should include:

- Clear and realistic expectations.
- Consideration of a variety of options.
- Acceptance of the technology by student, family, teacher(s), and others.
- Development of a plan for use and application of assistive technology.
- Training to assure integration of the device into the student's environment.
- Environment(s) in which the device or system will be utilized.
- Expected rate of progress toward independence.
- Maintenance and repair of device/system.
- Possible modifications or adjustments that may require assistance.

Proceed to Step #7.

Step #7 **REMEMBER: Consideration is an ONGOING PROCESS. Change in environment, change in student skill level or needs, and new technology may influence the process.**

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It is important for the IEP team to remember that considering assistive technology and evaluating its role in the educational program of a student is an ongoing process. While there may be a beginning, there could quite possibly be no end. The student's needs will likely change as environments change, as tasks required of the student change, and as abilities change.

The process of considering assistive technology is required, at a minimum, to be a part of every annual IEP review. In best practice, the evaluation process will be ongoing, with those around the student continuing to ask, *"Are the needs being met?"*

After the IEP team has answered the assistive technology question, how and where do they incorporate the answer into the IEP form?

The determination of how and where to include assistive technology on the IEP form is individualized for each student. As the IEP team makes this determination, information related to assistive technology should be based on the most recent evaluation information, as well as any current functioning levels resulting from a recently reviewed IEP.

Assistive technology is child-specific, designed to meet the individual needs of the child across environments, and not simply assistive devices or services designed for a time or a place. The local district and IEP team are responsible for determining what assistive devices and services, related services or supplementary aids and services are appropriate, where these items will be used, what the intended outcome should be as a result of using them, and where they will be documented on the IEP form.

Based on the discussion of previous outcomes, it is necessary for the IEP team to develop an action plan. This plan of action can be integrated into the IEP as documentation of con-

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sideration for assistive technology that will be used to meet the educational needs of the student in the LRE.

The documentation of assistive technology may be incorporated anywhere within the IEP, however there are four places in the IEP where assistive technology commonly appears:

1) As a part of the statement of Present Levels of Educational Performance.

2) In the annual goals and short-term objectives/major milestones.

3) In the enumeration of supplementary aids and services necessary to maintain the student in the LRE.

4) In the list of related services necessary for the student to benefit from his or her education.

NOTE: Assistive technology is necessary as a supplementary aid if its presence (along with other necessary aids) supports the student sufficiently to maintain the placement, and its absence requires the student's removal to a more restrictive setting. For example ˜˜ If a student with multiple physical disabilities can make independent, educational progress on his or her IEP goals in the regular classroom with the use of a computer and an augmentative communication device and cannot make such progress in that setting without the devices, then those devices are necessary supplementary aids.

Examples of Assistive Technology on the IEP

1. **Skill:** Communicating
   Setting: All School Settings

   Excerpt from PLEP:
   ...participation in group activities is significantly impacted due to limited expressive communication. ...relies on alternative communication forms to interact. (i.e., uses pictures for her communication. One picture is used to communicate an entire message.) ...is beginning to use some sound combinations with a communicative intent.

Baseline:
...uses total of 10 pictures to obtain tangibles in a structured situation with verbal prompts.

Goal:
...in 36 weeks, will independently communicate 50 messages representing a variety of language functions in structured school settings.

Evaluation Procedures:
Data collected weekly, recorded quarterly on communication rubric

Major Milestones:
...will communicate wants and needs during playtime.
...will communicate desired snack item during snack time.
...will call mom/dad or teacher when help is needed.
...will greet friends in the hallways and in the classroom.

Modifications:
...will communicate with an 8-message voice output device...will use picture communication boards as a back-up.

2. **Skill:** Following Directions
   Setting: Science

Excerpt from PLEP:
...wears two hearing aids.
...cannot understand teacher directions in Science lab classes due to the loud background noises from classmates working.

Baseline:
...misunderstands 50% of directions given.

Goal:
...in 36 weeks, will follow 90% of the teacher's directions in Science class (lab) using an FM auditory trainer with 100% accuracy. (equal benchmark for Science class)

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Evaluation Procedures:
Passing grade on lab projects. Teacher gradebook.

Major Milestones:
...will put on and wear the auditory trainer independently during all science labs.

...will (be able to) follow the teacher's directions in completing labs with 90% accuracy.

Modification:
...will use a personal auditory trainer in the classroom. Student will have preferential seating or written directions when auditory trainer is not available.

3. **Skill:** Asking/Answering Questions
   Setting: Social Studies

Excerpt from PLEP:
...understands key concepts of Social Studies class, follows directions, completes assignments
...does not make comments, share information or ask questions which are understandable by teachers or peers.

Goal:
...in 36 weeks, in a 5th grade general education Social Studies class; with a dynamic display voice output communication device; ...will make comments, share information, and ask questions relevant to the topic; at least 5 times per week during 4 weeks of the quarter.

Evaluation Procedures:
Frequency data collection form completed weekly, analyzed monthly.

Milestones:
Given cues and prompts, ...will make comments, share information, and ask questions relevant to the topic; at least 5 times per week during 4 weeks of the quarter.
...will independently make comments, share information, and ask questions relevant to the topic; at least 5 times per week during 4 weeks of the quarter.

Modification:
...will have dynamic display voice output communication device with printout of screens from device for back-up.

4. **Skill:** Writing
   Setting: Composition

Excerpt from PLEP:
...written products contain relevant information but quantity of work produced is not comparable to district standard.

Baseline:
...total length of written product is 30% of peers.

Goal:
In 36 weeks, using 7th grade research material; and a talking word processor with a talking spell check;...will increase the length of her written products to equal the length of peers and maintain 100% quality for all four research assignments during the school year.

Milestones:
...will increase the length of her written product to 50% the length of peers and maintain 100% quality for the first research assignment of the school year.
...will increase the length of her written product to 60% the length of peers and maintain 100% quality for the second research assignment of the school year.
...will increase the length of her written product to 70% the length of peers and maintain 100% quality for the third research assignment of the school year.
...will increase the length of her written product to 90% the length of peers and maintain 100% quality for the fourth research assignment of the school year.

Modification:
...will have a talking word processor with talking spell checker available on a computer in the special education classroom. When that computer is not available,... will use identical setup on computer in the computer lab.

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5. **Skill:** Following Directions
   Setting: Independent Daily Living

Excerpt from PLEP:
...eats snack with his group. He uses picture symbols to request snack items. He does not use picture symbols for actions and is unable to follow directions using picture sequence system.

Goal:
In 32 weeks, in a school snack activity, ...will prepare a simple snack using a 3-5 picture sequence system independently.

Evaluation Procedures:
Data collected weekly on number of actions recognized and number of actions completed in sequence.

Milestones:
...will appropriately select 10 picture symbols for actions needed in snack preparation.
...will follow the action represented in the pictures.
...will follow the actions represented in the picture sequence with teacher cues.
...will follow the picture sequences independently.

Modification:
...will use picture sequence system in daily living activities.

6. **Skill:** Writing Legibly
   Setting: Spelling

Excerpt from PLEP:
...participates in regular class spelling. She can orally spell the words correctly. ... writes less than 30% of the words correctly. Words are not consistently legible to ... and her teacher.

Goal:
In 30 weeks, with grade level spelling words, ... will use an alternative writing device to write 100% of the spelling list with an average of 80% accuracy.

Evaluation Procedures: Teacher's gradebook.

Milestones:
...will write 40% of the spelling words at 80% accuracy.
...will write 60% of the spelling words at 80% accuracy.
...will write 80% of the spelling words at 80% accuracy.
...will write 100% of the spelling words at 80% accuracy.

Modifications:
...shortened spelling list. Alternative writing devices will be used: portable computer, desktop computer, spelling template.

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Section IV

Building Assistive Technology Capacity at the District Level

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Section IV
Building Assistive Technology Capacity at the District Level

It is important to develop the capacity for making assistive technology decisions at the district level. A commitment by administrative and other district personnel to the exploration of technology tools that might provide support to students is essential. As part of this commitment the district needs to build support for educators and other staff in seeking out the appropriate technology for students and integrating that technology into school settings.

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Fundamental to the process is the commitment by the school board and administration to support educators in teaching **with** assistive technology. This support can be demonstrated by building assistive technology into the district's overall technology plan. The plan should include specific references to assistive technology in sections addressing curriculum, student learning outcomes, infrastructure needed to support teaching and learning, estimated costs and evaluation methods. This enables the district to plan its budget and to build in anticipated needs. It also demonstrates the district's careful consideration of the learning needs of all students. In this way, the technology plan is based on the vision of the district and the belief that students will emerge from the learning environment with certain skills and abilities evidenced by the learning expectations and outcomes of the district.

Two other elements essential to building assistive technology into a district's technology plan are 1) conducting a needs assessment and 2) developing an inventory of resources currently available. In considering assistive technology for individual students, a district needs to know what resources and inventory are available within the district. A needs assessment could highlight staff expertise and identify areas for staff development. An inventory of technology in the district could provide information on the number of various items and include informa-

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tion about the specifications of the equipment. Information provided by both the needs assessment and the inventory of technology is critical when the IEP team is exploring adaptations or alternatives to learning tools already in place in the classroom. The technology inventory may already be contained within the documentation of the district technology plan or it may be a stand alone database managed by the district technology representative.

The following examples illustrate different types of resources districts may already have which local educators and IEP teams could use to help meet the wide variety of student needs.

Tables and chairs.
It is essential to establish optimal positioning of a student in relation to work materials, whether computer-based or other classroom materials. Districts typically have a variety of sizes of student desks and chairs which can be explored as alternatives that may provide adequate stability, support and visual or motor access for a student.

Pens, pencils, and paper.
Simple adaptations can be explored to make the tools of writing better suited to individual students. Pens and pencils can be adapted to improve grip and weight. Paper can be varied in terms of width of lines for writing, some examples are wide rule, college rule, primary writing paper and colored paper for visual contrast. NCR note-taking paper might be used by a student to share notes from lecture material with another student.

Computer hardware.
Consideration of computer based adaptations should include such options as alternate keyboards or numeric keypads, mouse alternatives such as a trackball or trackpad, and portable computers or laptop computers currently available somewhere in the district.

Software.
It is important to be aware of software applications available in the district and to access individuals who are familiar with the applications, such as a technology coordinator, media special-

ist or building technology representative, to explore features of the software. Integrated office software packages, such as ClarisWorks, can be used to develop templates for organizing notetaking or minimizing formatting for daily work completion. Some applications have shortcuts which provide speech feedback for text highlighted in a document. Some educational software is designed with options to adjust the difficulty level, control the amount of interaction available to the student, or adjust the access method for physical differences. Use of keyboard commands can minimize mouse use for students who have difficulty using a mouse. Accessibility options are frequently built into computer operating systems. Software demos are available from many vendors or can be downloaded from the Internet. These exploration tools may contain a portion of the program or provide the complete program for a limited time.

Voice output communication devices.
Districts may have a voice output communication device which is not in use or has been designated for building use. Even a tape recorder with a 15-second loop tape, such as those used in answering machines, can be used to explore simple voice output for a student with limited expressive communication.

Internet.
The Internet has a wealth of resources for exploring assistive technology, e.g. lesson plans, picture enhanced recipe sequences, custom-designed multimedia programs such as HyperStudio stacks, curriculum integration ideas, etc. Many equipment and software vendors have websites which can be accessed for information about products, software demos, suggestions for use in the classroom, and frequently asked questions.

Professional resources.
Some district staff may have expertise teaching students with various learning styles and/or challenging behaviors. There may also be individuals in the district who are skilled in the use of specific types of technology, e.g. computer based peripherals and modifications which can be used to explore alternative computer access, multimedia which can be used to customize presentation of readiness or academic curriculum, copiers and

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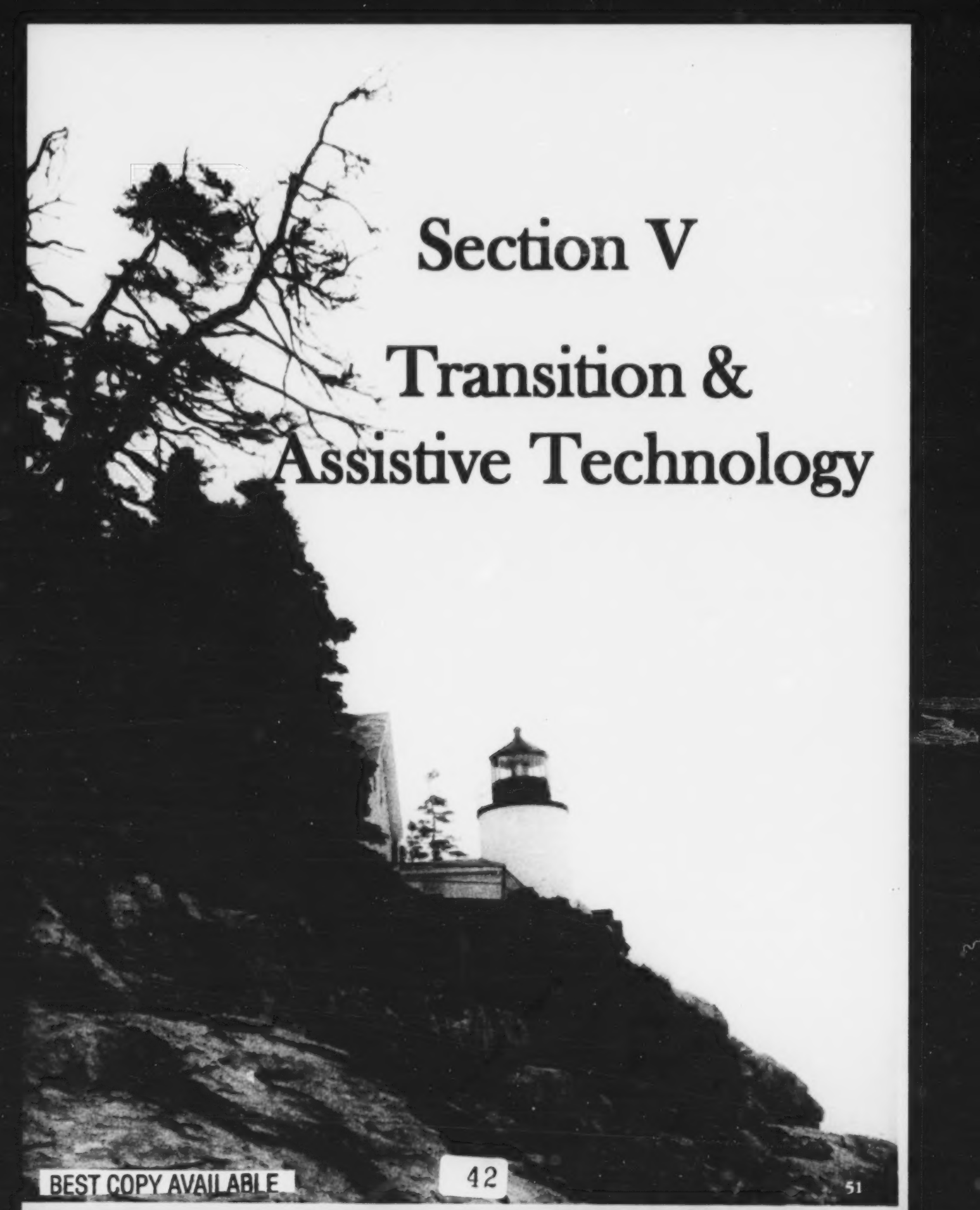
audiovisual equipment which can be used to enlarge print materials for improved visual access. Technology coordinators and media specialists with responsibility for a building's technology, may have broad-based knowledge of technology within the district and be able to provide information about compatibility of particular software with the platform and operating system used on the district computers. Area education agency practitioners are available to help district staff in addressing positioning, mobility, communication, vision, hearing and many other issues arising from a student's unique learning needs.

Staff development.

Technology is an integral part of many districts' staff development plans. Assistive technology can be a component of that training. Consulting the AEA staff development publications for specific workshops targeting assistive technology could provide useful information. The AEA AT-Team could be consulted on developing district-specific training in the area of assistive technology.



Section V

Transition & Assistive Technology

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Section V
Transition & Assistive Technology

Transition services are a coordinated set of activities for a student with a disability, designed to promote movement from school to post-school activities, including postsecondary education, vocational training, integrated employment, continuing and adult education, adult services, independent living, or community participation.

In order to address transition as it relates to assistive technology, the definition of transition in this document is expanded to include every type of change that occurs in a child's life. Transitions that take place in a child's life directly impact the use of assistive technology and the type of assistive technology a child needs to meet his or her individual needs. As a child grows, matures, and moves from setting to setting, his or her needs and abilities change. As these changes and transitions occur, appropriate assistive technology needs to remain available.

Assistive technology devices and services essential for a student to receive the provision of FAPE need to be available across environments. It is the responsibility of the IEP team to address issues surrounding transition and environmental changes.

Since assistive devices and services are child-specific, it is essential to consider availability and accessibility of such items at any point of transition for the child. Any and all transitions must be considered. The following is a list of some of the transitions a student may encounter:

- home-to-school
- preschool-to-kindergarten
- room-to-room
- elementary-to-middle school

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- middle school-to-high school
- program-to-program
- building-to-building
- school-to-home
- school-to-community

Student goals and objectives related to assistive technology and to transition should be developed and included in the IEP. Supports, services, and assistive technology necessary to achieve goals, must also be identified and included in the IEP.

When considering assistive technology and transition, the IEP team should address the following:

1. Is the assistive technology needed in this particular environment?
2. Is there a need to modify the assistive technology in a different environment?
3. How long will the student be in the environment, and for what purpose will he or she be there?
4. Are there transportation issues if the assistive technology is to be utilized in different locations?
5. Is there a need for additional assistive technology?
6. Will the student be able to use or access short-term loan or demonstration equipment during the transition period to a new environment?
7. Are there additional funding sources available for the assistive technology that will be utilized in an alternative environment?

It is important to link educational and work-related/post-school services for students with disabilities during the final years of secondary schooling. For the student using assistive technology services and devices, transition offers challenges to providing necessary supports. It is important for the IEP team to be aware of transitional issues and concerns, so resources for the student can be maximized and duplication of assistive technology efforts can be avoided.

For each student beginning at age 14, and younger if appropriate, a statement of the transition service needs including assistive technology, must appear under the applicable components of the student's IEP and must be reviewed annually. The intent

of this provision in IDEA is to help ensure the continuity of services between school and post-school life.

Transitions related specifically to assistive technology have been particularly frustrating for many individuals. In some cases individuals have experienced discontinuity of services, loss of potential for independence, loss of earning potential, loss of vocational options, and even loss of functional ability. Others have had to deal with unnecessary expenses and duplication of services. It is vitally important for the IEP team to address this particular aspect of assistive technology.

If a student needs a device to benefit from his or her educational program, a similar device will likely be needed for post-secondary education, work, work-related services, and post-school life in general. If a student needs an augmentative communication device to communicate in a school setting, an augmentative communication device with capacity to meet the demands of the post-school setting must continue to be available. A laptop computer used by a student who lacks fine motor skills to write will be as necessary for success in the work place as it was in school. The functional ability of the individual has not changed, only the setting.

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Section VI

Funding, Purchasing, & Maintaining Assistive Technology

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Section VI
Funding, Purchasing, & Maintaining Assistive Technology

Introduction

Notes:

IDEA places the responsibility for ensuring that the assistive technology needs of students are met, with the school district. If a student requires assistive technology services and devices in order to receive FAPE, the school must ensure that the appropriate devices are made available at no cost to the parent(s). The technology must be included in the student's IEP.

> Each public agency shall ensure that assistive technology devices or assistive technology services, or both, are made available to a child with a disability if either are required as part of the child's:
>
> - special education
> - related services
> - supplementary aids and services.
>
> *(IDEA, Title 34, CFR, Sec. 300.308)*

Funding & Purchasing Assistive Technology

Be Proactive.
Although most assistive technology devices are low in cost, some assistive technology devices are expensive. Rather than waiting until funding for a specific device is needed, school districts should be proactive in coordinating efforts to secure supplemental funding. By investigating potential funding sources before specific needs are identified, funds can be available to meet assistive technology needs as they occur.

When considering long-range planning, it is helpful to identify and consult with individuals in the district who may be instrumental in allocating or identifying funding sources for technology or special education needs.

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Purchase Appropriate Equipment.
Assistive technology must be evaluated in relation to the student's unique needs; strengths and weaknesses; and the goals, milestones, objectives and benchmarks identified by the IEP team. Technology or equipment that is difficult for the student to operate and does not move the student toward achieving specific goals, only becomes a frustration. By following this student-to-device feature matching, schools can avoid the costly error of purchasing equipment that is inappropriate for a student.

Consider Funding Principles.
There are four significant principles that surround assistive technology and must be a part of any decision-making process regarding its funding:

1. The focus during the selection of assistive technology must be on the desired outcome for the student rather than on equipment and costs.

2. Cost may be considered, but may not be a controlling factor in selecting appropriate assistive technology.

3. If more than one option will provide for the provisions of FAPE, then cost may be a legitimate factor in determining whether a particular service or device is appropriate.

4. The determination of appropriate assistive technology services and devices for students must be done on an individual basis and must adhere to the components of IDEA.

Conduct Trial Periods.
One way to avoid purchasing equipment needlessly, is to use "trial periods" to determine whether a particular assistive technology device is appropriate for a student. The length of a trial period will vary with each individual, depending on the type of assistive technology. It may be necessary for the student to try several different types of technology before the appropriate one can be selected.

The following factors may increase the length of a trial period:

- The individual for whom the assistive technology is prescribed needs to receive substantial training. If the technology is complex, the educational staff also need time to become proficient in its use and application.

- It takes a certain amount of time for everyone involved with the student using the assistive technology, to be able to evaluate its benefits. Some questions to ask when evaluating the benefits of assistive technology include:

  - Does the assistive technology meet the student's needs?
  - Is the student able to use the assistive technology effectively?

Consider Local Resources.
Districts and AEAs have equipment available that may be explored at no cost. The types of equipment vary from AEA to AEA and district to district, but these local resources should always be considered first. An AEA AT program may exist that could loan equipment to a student in order to see if it meets his or her needs, before an actual purchase is made.

Consider Renting Equipment.
It may be prudent to rent assistive technology before actually purchasing it. Some companies rent products and apply a portion or all of the rental fees to the purchase. It is best practice to review the return policy of companies from which assistive technology devices or products are ordered. If it is determined in the specified number of days that the assistive technology is inappropriate, it can be sent back to the company. Practices vary from company to company. Calling the company or checking the company's catalogue to determine exactly what their policies are, could prevent problems.

Research Vendor Policies.
Questions regarding a company's policy on trial periods, loaners, rentals, or returns, can be answered by contacting the company or distributor directly and asking specifically about the device being considered. When speaking to companies, ask if

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they demonstrate their products and if they have plans to exhibit at a location accessible to you in the near future. Asking if they are willing to place a device with a student on a trial basis for a specified period of time might also be helpful.

Explore Additional Funding Resources.
While a school district is ultimately responsible for ensuring that assistive technology services and devices are made available to a student in need of them, it may explore a variety of funding resources for purchasing services and devices to meet assistive technology needs. Potential sources for outside funding include:

1. **Private insurance**- Some health insurance plans will purchase assistive technology equipment considered medically necessary (a doctor's prescription is required). Schools may request, but may not require parents to use private insurance to pay for assistive technology devices and services. This resource may be used only when voluntary and informed consent is given by the parents. This approach to funding is not recommended when filing such a claim would cause the parents to experience a financial loss.

2. **Medicaid**- As a joint federal and state program, Medicaid may cover the cost of some assistive technology equipment if it is considered medically necessary. Schools may request permission from parents to use Medicaid funds, but parents are not obligated to use this source of funding. A parent's private insurance must be accessed (with parent permission) before Medicaid can be used to purchase assistive technology devices or services.

3. **Local/regional resources**- Service and civic organizations, churches, private industry, foundations, or individuals may be approached to assist in funding. The following are just a few of the service organizations that may assist in funding:

- Lions Club
- Masons
- Rotary Club
- Veterans of Foreign Wars
- Kiwanis
- Elks Club
- Knights of Columbus
- Shriners
- Soroptomists

The confidentiality and integrity of the child and family must always be considered when exploring funding resources.

4. **Other programs**- Schools can explore state or federal alternatives which may provide funding for the purchase of assistive technology devices and services. The AEA AT-team may also be able to provide additional resources for consideration.

5. **Some examples of nonprofit disability associations:**

- National Easter Seal Society
- United Way
- March of Dimes
- United Cerebral Palsy Association
- Muscular Dystrophy Association
- Braille Institute

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Funding Tips For The IEP Team

Accessing funding can take a long time; it would help to explore funding options before the need for funding arises. Determine what funding sources are available and what criteria or requirements need to be addressed in order to qualify. Identify which funding sources will support the purchase of assistive technology devices for specific disabilities.

Identify specific individuals or contacts within potential funding organizations and open lines of communication with them. You will be more successful in securing funding from a source if you have already developed a working relationship with that source. Remember school staff and school board members may already have access to a variety of sources. If there is a "known" personal contact, the opportunity to secure funding is more likely.

Include families and professionals in all aspects of the funding process and keep them up to date regarding the process for determining what is appropriate and necessary.

When the purchase of an assistive technology device appears to be imminent, gather supporting information (i.e., documents, or letters that may be helpful in securing funding) as early as possible.

Maintaining Assistive Technology

Any repair or replacement costs for a device are the school district's responsibility if the device is provided as a part of the student's IEP. If a student's IEP provides for home use of the device, the district is responsible for repair even if the damage occurs during home use.

It is critical that assistive technology written into the IEP be routinely available. In order to appropriately address the IEP of a student with assistive technology needs, it is vital to keep the delays in the repair of a device at a minimum.

When an assistive technology device or system is not available to the student because it is being repaired, the IEP of that student is not being addressed appropriately unless backup systems are identified and available. It is also beneficial to address certain questions regarding repair and maintenance before the device is purchased. Some of these questions may include:

1) **What is the warranty?**
   Check the length of the warranty and find out exactly what is covered. One-year warranties are common. Extended warranties and service contracts may be available. For some devices, manufacturers suggest annual maintenance. Contact someone who has previously purchased the device to find out about their experience and ask them for a history of repairs for the device.

2) **What kind of backup support is provided?**
   Reputable manufacturers and distributors should be able to address any questions you have regarding repair or replacement of equipment. Find out if the company has a toll-free number that you can call for technical assistance, or other questions you may have related to the device and its application. Find out if there is a "help line," when it is available, and how to access it. Also find out if replacement equipment is available during downtime created by needed repair.

3) **Is the user's manual for the device user-friendly?**
   Look at the user's manual for the device you are considering purchasing. Determine if it is easy to understand and if there is a "frequently asked questions" or "troubleshooting" section.

4) **What happens if the device needs repairs?**
   Ask if the company will provide a loaner device if the equipment you are using cannot be repaired in a short time. Some companies indicate a quick turnaround time for repairs, but it is important to determine what is available for loaner or replacement equipment if repair will take more than a few days. Make sure that a manufacturer or distributor's repair policy meets the needs of the student using the device.

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5) **Is it possible to have the device repaired locally?**
Use extreme caution when considering repairing a device yourself, or having it repaired locally. Unauthorized individuals attempting repairs may damage the device and void the warranty. Check with the company or dealer before making any attempt to repair a device.

6) **What is the return policy for the device?**
It is important to know about each company's return policy before purchasing a device. If the device is not working functionally or mechanically as anticipated, it is best to know in advance what procedures to follow in order to return or exchange the device.

Assistive Technology & Liability

To lessen the risk of liability and mitigate damages in any lawsuit, a school district should document any training of staff regarding the use of particular assistive technology devices.

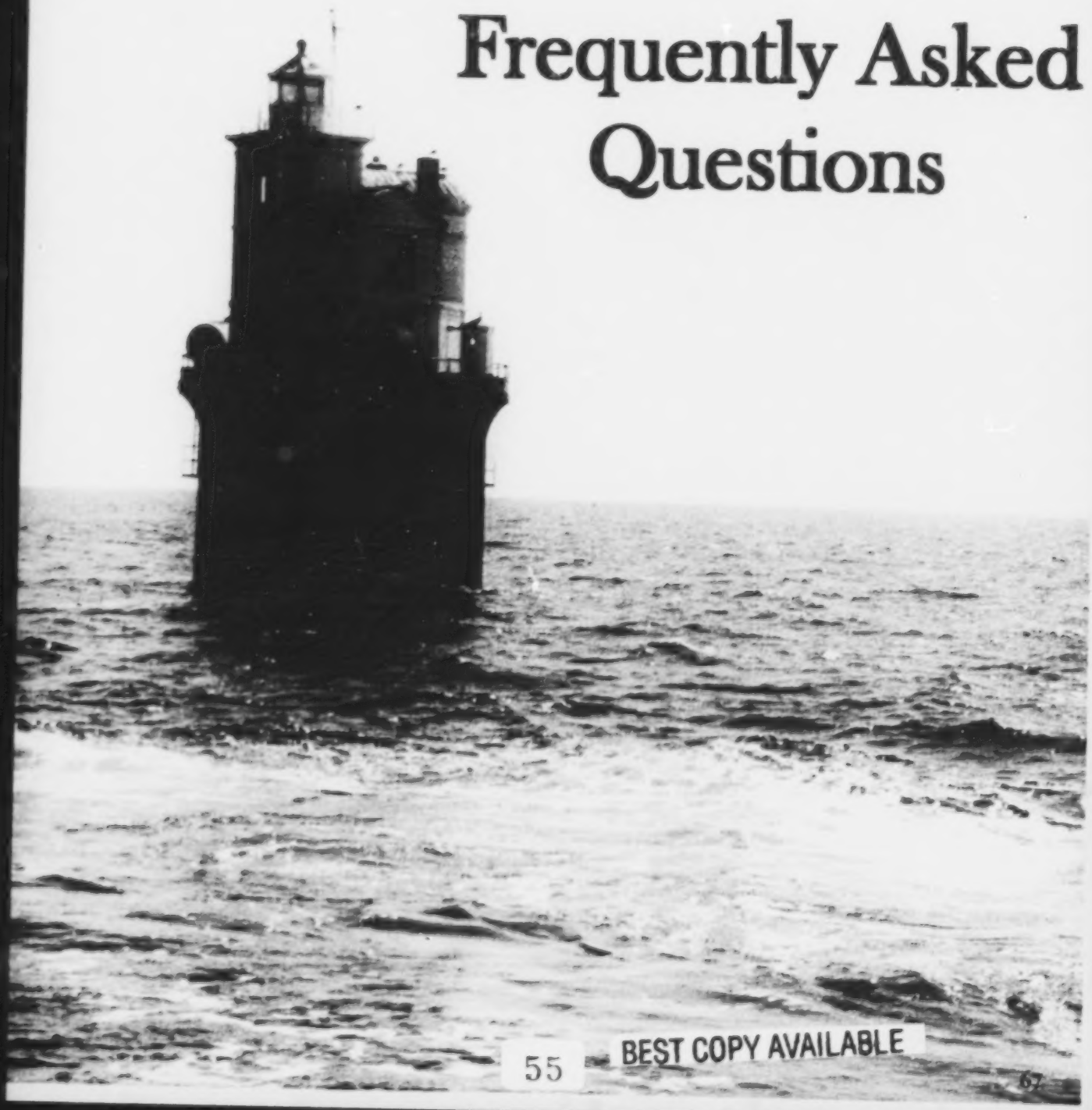
Negligent use of an assistive technology device, by a staff member, that causes injury to a student is a potential area of liability. School officials should consult their attorney(s) and insurance carriers regarding potential liability and insurance coverage limits.

Staff who are not covered under school district liability insurance for claims made against them as individuals should consider obtaining personal liability policies if they are concerned about potential liability. Such coverage is recommended.

While it is conceivable that some assistive technology devices have the potential to increase the risk of liability for a school district and their individual staff members, it is not likely that this will occur.

Section VII

Frequently Asked Questions



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Section VII
Frequently Asked Questions

Service Delivery

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1. **As a member of the IEP team, how do I know if a student should even be referred for assistive technology services?**

   The initial question is not one of referral, but of consideration: All children eligible to receive specially designed instruction through an IEP must be considered for assistive technology. The team must ask, "What is it we want the child to be able to do within his educational program, that he isn't able to do because of his disability?" Would assistive technology enable the child to meet the goal? If the members of the IEP team don't have the necessary knowledge base to make a decision or recommendations regarding assistive technology, the student must then be referred to the appropriate individuals who do, e.g. the AEA AT-team (Adapted from Chambers, A.C., p. 12).

2. **In addition to the student, are there other individuals who should be trained to use the assistive technology device?**

   Yes. Provision of assistive technology without integration into the student's individual goals and objectives will result in little, if any, benefit. All individuals who work or play with the student should be part of this process. For a student with a disability it is not enough to have the classroom teacher or related service personnel (i.e., occupational therapist, physical therapist, speech/language pathologist) be the only ones trained in the use of the device. If the device is to be meaningfully integrated into the student's life and curriculum, the significant people with whom he/she interacts need to be familiar with the assistive technology device. If parents, siblings,

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or peer mentors are expected to assist the student with class work, homework assignments and/or communication, they must know how to effectively use the device(s). Often, very limited instruction is needed. Nonetheless, if these services are needed to help the student meet the IEP goals and objectives and benefit from the educational program, the school is responsible for providing these services (Adapted from Maine Department of Education, Division of Special Services, Maine CITE Project, 1996).

(For additional information see the *Building Assistive Technology Capacity at the District Level* section in this document.)

3. **How and when will individuals be able to learn how to use technology?**

In order to ensure the child is able to receive an appropriate education through the use of assistive technology, it is the responsibility of the school district to provide the time and the opportunity for individuals to receive training. Training should be available to all personnel and family members if their training would help the student to receive educational benefit in the classroom. District personnel, AEA A-T staff, vendors, or other appropriate individuals may conduct the actual training activities.

(For additional information see the *Building Assistive Technology Capacity at the District Level* section in this document.)

4. **Can a student take a device home that was purchased by the school district?**

Yes. If it is determined by the IEP team that a particular assistive technology device or service is necessary for home use in order for the child to receive FAPE, the technology must be provided in the home by the school district to implement the IEP. This means that the IEP team must determine whether it is necessary for the child to have access to the device at home and at school. If so, it must be documented within the IEP, and the district

must allow the student to take the device home, provide another alternative or provide two devices, one for home and one for school (Chambers, A.C., p. 13).

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5. **As a member of the IEP team, how do I determine if the assistive technology a student is currently using needs to be updated?**

The evaluation of assistive technology is an ongoing process, so the team working with the child must continue to evaluate if what is in place is continuing to meet the student's needs. Are the criteria which were set for the child being met through the current interventions? Are there criteria which are not being met? The team must consider the current levels of performance, the anticipated levels of performance and the difference a device, service or other modification may make in achieving the anticipated levels. This means that if an assistive technology device is working adequately to meet the student's needs, a newer device does not necessarily need to be acquired. If however, there are skills and activities the student could participate in if a different device was available, the different device may be required to meet the "minimally necessary" standard. It continues to be the school district's responsibility to make available the assistive technology service(s) or device "minimally necessary" for the child to receive a free, appropriate education (Adapted from Chambers, A.C., p.10).

6. **Where does assistive technology get written on the IEP form?**

Assistive technology may be documented anywhere within the IEP; however, there are four places where assistive technology commonly appears: as part of the statement of present levels of educational performance, in the annual goals (milestones); in the list of supplementary aids and services necessary to maintain the student in the least restrictive environment; and/or in the statement of related services necessary for the student to benefit from his or her special education.

(For additional information see the *Assistive Technology and the IEP* section of this document.)

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7. How is assistive technology integrated into the curriculum?

The IEP team, which includes the general classroom teacher, needs to discuss how the device will be used by the student and how it will be integrated into the curriculum. The IEP team should identify, in the IEP document, how the device will be used by the student in the classroom. Assistive technology should be used to help the student be involved in and progress in the general education curriculum.

(For additional information see the sections: *How Is Assistive Technology Relevant To Students?* & *Assistive Technology & The IEP* in this document.)

8. What if a student abuses or mistreats equipment?

The behavior of the child does not mean he/she cannot be considered for assistive technology. The severity of a child's behavior is not a valid reason for a school district to elect not to provide the device if the child requires it to receive an appropriate education. The behaviors do, however, need to be addressed when the team is considering features of the possible devices and or services that will meet the student's needs (Chambers, A.C., p. 13).

9. What are some of the considerations that should be factored into the evaluation of assistive technology devices or services?

Assistive technology evaluation results are key to what is included on the IEP. It is critical that the evaluations accurately reflect the preferences, strengths, and needs of the student with the disability as well as his or her family. The environment used in the evaluation process is also critical. IDEA requires that the evaluation be performed in the settings in which the assistive technology device(s) will be used (i.e., the playground, music class, gymnasium, regular classroom, bus) (Adapted from Maine Department of Education, Division of Special Services, Maine CITE Project, 1996).

(For additional information see the *Assistive Technology and the IEP* section in this document.)

10. **If evaluation results recommend the acquisition of an assistive technology device, what are some of the questions that should be asked before the final decision is made regarding which device is most appropriate for the student?**

Basic questions to ask about assistive technology:

- What will it accomplish?
- What problems will it solve?
- What are its limitations?
- What are the advantages/disadvantages of this system?
- Is it flexible enough to accommodate changes if the student's disability changes?
- Is there a way that a "standard" piece of equipment could be modified to meet the need?

Questions on characteristics and features:

- Is the general appearance acceptable and desirable?
- Is it comfortable and conforming personally and environmentally?
- What are the safety features?
- How safe is it when thinking about how it's going to be used?
- Is it washable?
- Can it be used indoors and outdoors?
- Will bad weather affect its use and performance?
- Does it have special features to make it more/less desirable?
- How big is it?
- How much does it weigh?
- Are size and weight important features?
- How durable is it?
- How moisture resistant is it?
- How impact resistant is it?
- Are impact and moisture resistant features important?

Questions on availability and purchase:

- Is a prescription necessary?
- Does the cost affect the ability to acquire it?
- Has it been on the market long enough to establish itself?

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- Are references available from past and present users?
- Is it a stock item or does it need to be made to order?
- What is the return policy?
- What are the conditions of the warranty?

Questions on examination and use:

- Is there a demonstration available?
- Is it possible to rent or borrow this equipment?
- Is there an opportunity to see it being used by others?
- Has it been field tested?
- If the device has been field tested, by whom?
- Is the operation complicated beyond user tolerance?
- Is user training available from qualified individuals locally or the vendor?
- Is training included in the purchase/rental price?
- Is technical support available?

Questions on wear and maintenance:

- What is the expected lifetime of the system/device?
- What is the frequency of repairs?
- What is the required service and maintenance?
- Who does the required service and maintenance?
- How far will it be necessary to travel to get service or maintenance?
- Is there a loaner available during repair periods?
- Can the student fix or adjust the device (without voiding the warranty)?
- Is there someone else who can fix or adjust the device for the student (without voiding the warranty)?
- Is there adequate, understandable maintenance information available for the student and his/her family?

Technical questions:

- Does the assistive technology device, if it is electrical, require batteries, battery chargers, an AC adapter?
- If batteries are required, how expensive are they?
- How long are the batteries expected to last?
- Does the device use standard components and values (i.e., switches, software, hardware, voltages)?

- What kinds of advantages/disadvantages are associated with its use?
- Is the device compatible with other equipment (cords, connectors, attachments, other equipment, machinery, etc.) or methods currently used by the student?

(Adapted from Maine Department of Education, Division of Special Services, Maine CITE Project, 1996)

(For additional information see the *Assistive Technology and the IEP* section in this document.)

11. **When a student moves from one level of schooling to another, such as from elementary school to middle school, does the assistive technology prescribed for and used by the student follow him/her?**

If an assistive technology device is necessary to fulfill the requirements of the student's IEP, such a device must be provided in the school the student attends. The same device may not necessarily follow the student from one school to another, but a comparable device that fulfills the IEP requirements must be provided in the new school.

(For additional information see the *Transition and Assistive Technology* section in this document.)

Responsibility/Legal Issues

1. **Who decides what assistive technology is appropriate?**

Deciding what is appropriate must be an IEP team decision. The child's parents, care givers, teachers, direct service providers such as therapists, and assistive technology specialist, should be involved as necessary. The team making the decision must have knowledge and experience in relation to the possible intervention strategies, devices, and services which may help to meet the specific need of the child.

(For additional information see the section in this document titled: *Assistive Technology and the IEP.*

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2. As a member of the IEP team, how do I determine if the assistive technology is educational or medical in nature and why is that distinction important?

Determining whether assistive technology is educational or medical in nature is an issue primarily when seeking funding from third party payers such as insurance companies or funding sources which have specific guidelines regarding how their contributions or grant monies can be used.

Each AEA has funding specialists with specific knowledge about assistive technology funding as well as school social workers who can facilitate the funding process.

In general, the guidelines that follow can be helpful in sorting out whether assistive technology needs are medical versus educational.

Purpose
Is the device or service required to sustain life or needed to attain developmental or educational goals? The more life sustaining, the more likely the assistive technology is to be determined to be medical.

Expertise Required
What is the level of expertise required to deliver the device or service? If a medical doctor typically delivers the assistive technology, it is more likely to be considered medical than if delivered by non-MD professionals.

Intrusiveness
What is the level of intrusiveness of the device or service? The more intrusive, the more likely it is to be considered medical. Devices that are surgically implanted would be ones that are very physically intrusive that would likely be considered medical rather than educational.

Delivery Environment
What is the environment in which the device/service is delivered? If it can only be delivered in a hospital, it is more apt to be determined medical than if it can be delivered in the home, school, or other settings.

Liability/Risk
What is the liability and risk assumed by the school in providing the assistive technology? If, for example, the device breaks down or the service provider is ill and the assistive technology cannot be delivered, is the situation life threatening? The greater the liability and risk, the more likely the assistive technology may be considered medical.

Burden
What is the burden on the school district if the assistive technology is provided? Time and expense have both been included as factors in the consideration of burden. If the assistive technology device or service is close to a level of "virtual constant care" it may be considered medical.

Guidelines from the work of Dr. Diane Cordry Golden
Missouri Assistive Technology Project
800/647-8557 (v) 800/647-8558 (TTY)

3. **Is a school district responsible for providing "state of the art" equipment for the student?**

No. However, the school must provide appropriate technology for the student's needs to ensure a free appropriate education. The decision regarding what type of assistive technology is appropriate should be based on the assistive technology evaluation recommendations and IEP team decision. If a less expensive device would accomplish the same goals, the IEP team is under no obligation to choose a more expensive one.

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4. How does a school determine if an assistive technology device constitutes a "best" versus "appropriate" educational program? ("best" and "appropriate" are the words used in case law to describe the difference between providing the absolute "best" technology available to a student versus providing technology that is "appropriate" and meets the needs of the student.)

An educational program is "appropriate" when it provides "educational benefit." There is no substantive requirement in IDEA which addresses the degree of benefit that must be provided. What is clear, however, is the expectation that educational programs do more than prevent regression or provide more than zero benefit. The benefit must be meaningful. To address if these benefits are "appropriate" or "best" consider what the student's program is before the recommendation for an assistive technology device is made. Questions to ask include:

- Does the student have access to all the instruction and other activities that are available to his/her nondisabled peers?
- Has the student reached the same level of social maturity, motor development, communication skill, etc. as his/her age peers?
- Is the child who is placed in the regular classroom, receiving the regular curriculum?
- Have educational and related service goals been set that will enable the student to achieve the same performance levels as age peers prior to the age of 21 when educational entitlement ends?

Assistive technology would be considered "best" and not "appropriate":

- If the **current** level of services already provided by the school affords the student the opportunity to develop the same skills to the same degree as his/her peers; or,

- If even with the assistive technology device(s) and service(s) the student would not be able to develop these skills at a rate or to a degree significantly greater than he/she would without the device(s) and service(s).

If on the other hand these statements are not true, then assistive technology might be considered appropriate in meeting the educational goals of the student.

(Adapted from Maine Department of Education, Division of Special Services, Maine CITE Project, 1996)

5. **If a device is broken and beyond repair, who replaces the broken device?**

If an assistive technology device is necessary for the student's IEP to be implemented, the school district must replace the broken device.

(For additional information see the *Funding, Purchasing & Maintaining Assistive Technology* section in this document.)

6. **Who owns the assistive technology device that is purchased for the student?**

If the school district purchases the equipment, the equipment belongs to the school. If the device is purchased using private insurance or purchased outright by the family, then the device belongs to the parent, and is meant for the exclusive use of the student. If the device was donated to the school, the IEP team decides ownership.

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Funding

1. Who pays for assistive technology?

The school district is responsible for ensuring that assistive technology needs of the child are met. Districts may utilize alternative funding sources for the provision of assistive technology devices or services; however, these funds cannot be used if the results would be a reduction of medical or other type of assistance to the child and the family. Additionally, the use of private insurance proceeds must not pose a realistic threat of financial loss to the parents of the child with disabilities. Schools may request but cannot require parents to use private insurance to pay for a child's required services or devices (Chambers, A.C., p. 8).

In many cases, if assistive technology will be used across home, school, and community environments, families are interested in acquiring the technology so it belongs to their child. The AEA A-T Team, AEA funding specialist, and/or school social worker can assist the family in exploring funding for the technology.

2. How can districts be proactive in acquiring funds for technology to meet the needs of special needs students?

Districts can be proactive in acquiring funds for assistive technology in many ways:

- address assistive technology in district's overall technology plan
- research the possibility of using PTA gifts to the district
- contact local service organizations
- consider Medicaid, Vocational Rehabilitation
- hold fund-raisers

(For additional information see the *Funding, Purchasing, and Maintaining Assistive Technology* section of this document as well as the section *on Building Assistive Technology Capacity at the District Level.*)

3. **Does the district still have to provide the prescribed assistive technology even though the special education funds are already allocated?**

Yes. Cost may be considered but it cannot be a controlling factor. Cost may **not** be a factor when the alternative is the denial of a free appropriate public education. If more than one option will provide for the provisions of FAPE, then cost may be a legitimate factor in determining which particular device or service is appropriate. The determination, however, must be made on an individual basis and must follow the components of IDEA.

(For additional information see the *Funding, Purchasing & Maintaining Assistive Technology* section in this document.)

4. **Can schools require parents to use their private insurance to pay for necessary assistive technology devices and services?**

No. The "free" in "free appropriate public education" is extremely significant regarding children with disabilities who may require assistive technology devices or services. As stated in IDEA and its regulations, all aspects of the special education and related services must be provided "at no cost to the parents." The term "free" is interpreted broadly and goes far beyond the simple paying of deductibles and co-payment. The courts have interpreted "free" to apply to a cadre of parameters including but not limited to: future insurability, depletion of maximum lifetime caps, raised premiums, discontinuation of policy, and pre-existing condition exclusions. If the family agrees to allow the school to access their private insurance, this decision must be strictly **voluntary** (Adapted from Maine Department of Education, Division of Special Services, Maine CITE Project, 1996).

(For additional information see the *Funding, Purchasing & Maintaining Assistive Technology* section in this document.)

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5. **Can families ever be asked to purchase the devices or augment the identified assistive technology needs of their child?**

Yes. Education is a shared responsibility between school, families, and communities. Schools develop relationships with families and as part of this communication, there are times when parents can be asked what devices or services they could afford to purchase. It is well recognized that assistive devices and services are used across a broad spectrum. These devices and services serve functional as well as educational needs. When viewed in this manner, the possibility of joint funding is entirely appropriate as long as the parents' willingness to share the financial responsibility is **voluntary**. Schools should always be mindful, however, that if the assistive technology devices and services appear in the IEP, then the school is responsible for ensuring that the assistive technology needs of a student are met. Even if the family does purchase the assistive technology device, the schools cannot mandate that the device be brought to school (Adapted from Maine Department of Education, Division of Special Services, Maine CITE Project, 1996).

6. **What avenues are available to a district that wants to learn more about how to consider assistive technology for students? How can a district explore assistive technology if they don't have the equipment?**

- Contact the Area Education Agency (e.g. special education practitioners such as occupational therapist, physical therapist, speech-language pathologist; AEA A-T Team).
- Consult the district technology coordinator.
- Consider and explore loans from other districts.
- Explore internet resources.
- See letter from Dick Riley, in Appendix F, regarding *Acquiring Technology Which Can Be Adapted.*
- See Appendix G regarding *Department of Education Requirements for Accessible Software Design.*

The district administration needs to commit to developing a plan that includes building local resources and knowledge so district staff and AEA support personnel can make informed decisions as they consider assistive technology needs of students. The commitment can be realized through a variety of activities:

- district technology planning, technology purchases which can be adapted or modified or are specifically designed for assistive technology;
- staff development to build skills in exploring technology, identifying and building relationships with community partners; and
- identifying skills and expertise of district staff which can be accessed to support exploration of assistive technology.

(For additional information see sections *Funding, Purchasing & Maintaining Assistive Technology* & *Building Assistive Technology Capacity at the District Level* in this document.)

7. Are there other options for schools to consider in lieu of purchasing the assistive technology device?

Yes. There are times when the outright purchase of equipment or devices is not necessary or even advisable. In instances such as these, schools might consider rental or long-term lease/purchase options. Equipment rentals or long-term lease/purchase options are not intended to be less costly than purchase. There are certain advantages worth considering depending on the individual needs of the student. For example, renting equipment might be a reasonable strategy if the child's condition is considered temporary; if the child's condition is expected to improve or deteriorate; or, when trying out the equipment before purchasing it for a student. Long-term leasing or lease/purchase agreements also have potential benefits for schools which include: no obligation on behalf of the school to purchase the device; use of equipment without a lump-sum purchase; upgrading of equipment as more improved technology becomes available;

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and, upgrading of equipment as the student's needs change (Adapted from Maine Department of Education, Division of Special Services, Maine CITE Project, 1996).

(For additional information see the *Funding, Purchasing & Maintaining Assistive Technology* section in this document.)

8. **Can schools share the funding responsibilities of providing assistive technology devices and services?**

Yes. Shared funding, while not well developed, is certainly recommended. This practice is especially appropriate for children with disabilities who are expected to transition from birth to five programs (i.e., Early Childhood Classes and Headstart) or transitioning to adult programs such as Vocational Rehabilitation. (Adapted from Maine Department of Education, Division of Special Services, Maine CITE Project, 1996)

(For additional information see the *Assistive Technology & Transition* section in this document.)

9. **If a piece of assistive technology is no longer needed by a student, and the device was paid for by private insurance, can the device be donated for another student's benefit?**

Yes, but it is a parental decision. The parent(s) may donate the device to the school for use by other students.

Section VIII

Additional Resources

BEST COPY AVAILABLE

Forms

Curriculum Tree

Arrival

Takes off coat with assistance; puts on hook
Teacher gives Johnny schedule card of first event in day
Associate pushes wheel-chair to table.

Opening

Class says pledge
Does weather, attendance, days of week
Sharing (kids take turns)

Reading/L.A.

Students write in journal for 5 minutes
Share with buddy what they wrote
Reading groups/stations rotate with teacher
…writer's table;
reading independently;
listening to group tape

Recess

Class goes outside Johnny stays in with associate for health reasons.

Closing

Teacher reads to class

Gets coats/bags

Classroom equipment available:

- Mac Computer and software collection
- BIGmack talking switch
- Big Red Switch
- Tape Player

Specials

Music/Art/P.E.
Johnny goes with class

Weekly Reader

Class discussion
Small Group Interaction

Johnny Cash
First Grade Class

Lunch

Associate assists in feeding skills in lunchroom

Johnny is nonverbal and in a wheelchair.
He has a 1:1 associate.

Recess

Johnny remains inside for recess with associate

Quite Reading

Students individually read books; associate looks at a book with Johnny

Math

Class does DAP Math with manipulatives

Johnny is unable to pick up small manipulatives on his own

Susan McCord
Adapted by Minor.
Example created by Julie Freed of Grantwood AEA.

Curriculum Tree

8:45 Arrival Front door

Comm. Where shall we go now?

Position:W/C

Bus. 33 - Ed.

9:00 Opening

Tell hot or cold lunch
3 second gaze at picture

W/C

Math 9:10 - 10:00
-Choose materials (tell done)
-Choose next materials

Rifton & Stander
(M)(W)(F)

10:00- 10:30
Spelling/Handwriting
Computer
Choose program

W/C
(Thr) Stander

10:30 - 11:00
Recess/Snack

W/C

Stander (T)

'Ami's Communication & Position

2:15 or 2:05
Goes home.

11:00 - 11:30
Lang. Arts/Reading
-Choose a book
-Choose material

W/C

1:35 - 2:00
M/W/F Science
Sensory Activities
T- Art
Thr-LA
-Choose book, etc.
W/C

1:00 - 1:35
M/W/F Social Studies
T/Writers
Th. PC
-Sustained Eye gaze
-Computer
W/C Stander(Thr)

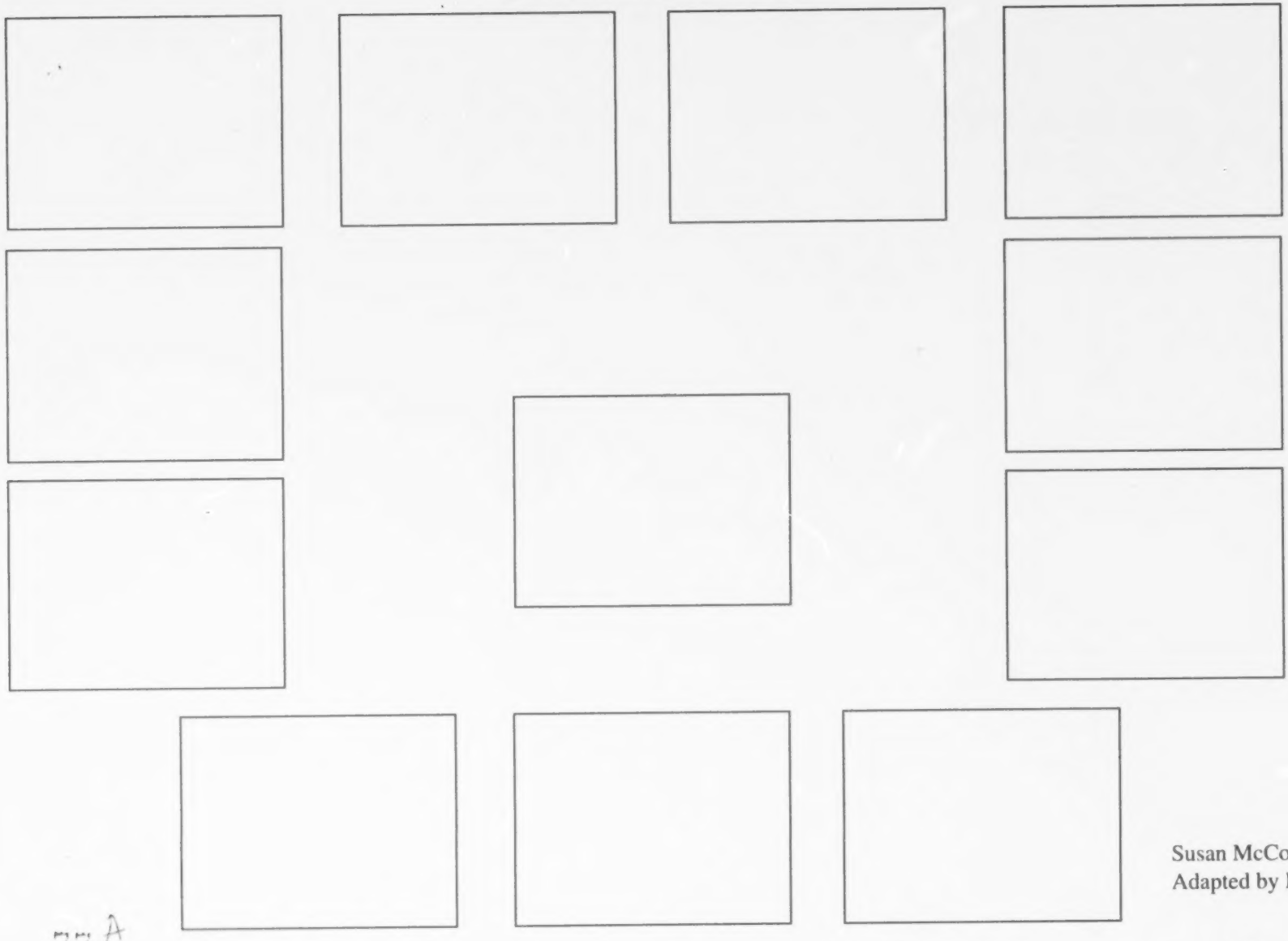
11:30 - 1:00
Lunch

Associate break during this time.

W/C

Susan McCord
Adapted by Minor

Curriculum Tree



Susan McCord
Adapted by Minor

77 A

Curriculum Modification Ladder

Subject: Social Studies Grade Level: _____

Objective: _____

1. Can the student do the same as peers,
   e.g., Write letter on Indian trade.
   e.g., _____

if not, can

2. the student do the same activity but with adapted expectations,
   e.g., Write 5 sentences.
   e.g., _____

if not, can

3. the student do the same activity but with adapted expectations and materials,
   e.g., Write captions to pictures in text.
   e.g., _____

if not, can

4. the student do a similar activity but with adapted expectations,
   e.g., Create a word list and choose two to illustrate.
   e.g., _____

if not, can

5. the student do a similar activity but with adapted materials,
   e.g., Draw a picture and write or describe.
   e.g., _____

if not, can

6. the student do a different parallel activity,
   e.g., Go through magazine and get pictures.
   e.g., _____

if not, can

7. the student do a different activity in a different section of the room,
   e.g., Participate in play of Oregon trail.
   e.g., _____

if not, can

8. the student do a functional activity in a different section of the school?
   e.g., Go to the school store (i.e., trading post).
   e.g., _____

Adapted from:

1. DeBoer-Haller Company
2. Project Dakota Outreach, Tailor Made Early Intervention Training & Consultation Services

Curriculum Modification Ladder

Subject:_____ Grade Level:_____

Objective:_____

1. Can the student do the same as peers,
   e.g., Spelling
   e.g.,_____

if not, can

2. the student do the same activity but with adapted expectations,
   e.g., less words
   e.g.,_____

if not, can

3. the student do the same activity but with adapted expectations and materials,
   e.g., matching the words to pictures
   e.g.,_____

if not, can

4. the student do a similar activity but with adapted expectations,
   e.g., words that are functional and in the student's daily environment
   e.g.,_____

if not, can

5. the student do a similar activity but with adapted materials,
   e.g., computer spelling program
   e.g.,_____

if not, can

6. the student do a different parallel activity,
   e.g., learn a computer typing program, learn word processing with a spell checker,
   e.g., write or put pictures in a journal

if not, can

7. the student do a different activity in a different section of the room,
   e.g., computer game matching pictures to words
   e.g.,_____

if not, can

8. the student do a functional activity in a different section of the school?
   e.g., in the library, kitchen, gym, office, another room doing helper tasks, with a
   e.g., same age or older peer helper or adult

Adapted from:

1. DeBoer-Haller Company
2. Project Dakota Outreach, Tailor Made Early Intervention Training & Consultation Services

Curriculum Modification Ladder

Subject:_____ Grade Level:_____

Objective:_____

1. Can the student do the same as peers,
   e.g.,_____
   e.g.,_____
   _____

if not, can

2. the student do the same activity but with adapted expectations,
   e.g.,_____
   e.g.,_____
   _____

if not, can

3. the student do the same activity but with adapted expectations and materials,
   e.g.,_____
   e.g.,_____
   _____

if not, can

4. the student do a similar activity but with adapted expectations,
   e.g.,_____
   e.g.,_____
   _____

if not, can

5. the student do a similar activity but with adapted materials,
   e.g.,_____
   e.g.,_____
   _____

if not, can

6. the student do a different parallel activity,
   e.g.,_____
   e.g.,_____
   _____

if not, can

7. the student do a different activity in a different section of the room,
   e.g.,_____
   e.g.,_____
   _____

if not, can

8. the student do a functional activity in a different section of the school?
   e.g.,_____
   e.g.,_____
   _____

Adapted from:

1. DeBoer-Haller Company
2. Project Dakota Outreach, Tailor Made Early Intervention Training & Consultation Services

Day Mapping for Writing Demands

Student Name: Joel Ellis Date: April 1, 1999

Time of the day	Activity/Class	Where is the student?	What tasks require writing ?	How are these tasks typically completed?
Morning	Health	Mr. Wright	Take notes, Quizzes, Tests, Questions on board (books do not leave room)	Associate writes
	Language Arts	Mrs. Rechly	SP-worksheets DOL Reading-Worksheets	Typewriter or oral
	Social Studies	Mr. Wright	Take notes Fill out quiz or test	Associate writes
	Exploratory Writing	Mrs. Danka	Write journal daily. Worksheets	Associate writes
Afternoon	Science	Mr. Kramer	Take notes Worksheets Tests	Associate writes
	Computer	H.S. Computer Room	Story	Computer
	Math	Mrs. Rechly	Worksheets	Typewriter or Associate
Evening				

Day Mapping for _____ Demands

Student Name:_____ Date:_____

Time of the day	Activity/Class	Where is the student?	What tasks require _____ ?	How are these tasks typically completed?
Morning				
Afternoon				
Evening				

AEA _____ Assistive Technology Referral Form

Student's Name:_____ Date:_____

School/District: _____ Phone:_____

Contact Person: _____

1. What is the primary area of concern?

2. Who is requesting this referral?

3. What do you know from outside sources regarding the needs of the student, i.e., Child Health Specialty Clinics, University of Iowa, medical doctor, etc.?

4. What have you tried?

5. How did it work?

6. What is the next step? What action would you like to have happen with the school/building team or the Assistive Technology Team?

7. Have the parents signed a consent for a consultation to be completed?

Assistive Technology Team Consultation

File #:_____

Student's Name:_____ Date: _____

School:_____ Birthdate: _____

Team Members Present:_____

_____

Devices/software/equipment/activities tried:_____

_____

_____

_____

_____

_____

_____

_____

Recommendations:_____

_____

_____

_____

_____

_____

_____

Equipment loaned:_____

_____

Equipment Return Date:_____

Next Meeting Date:_____

Documents

Documents

Central Instructional Support Center (CISC), Instructional Support System of Pennsylvania, Pennsylvania Department of Education, Pennsylvania Department of Public Welfare. *Assistive Technology: A Focus on Accommodations for Learning.* Harrisburg, PA: Author.

Chambers, A.C. (1997). *CASE/TAM Assistive Technology Policy & Practice Series: Has Technology Been Considered? A Guide for IEP Teams* . Reston, VA: Council of Administrators of Special Education and the Technology and Media Division of The Council for Exceptional Children.

Iowa Department of Education, Bureau of Children, Family & Community Services In Collaboration with Iowa Area Education Agencies and Local Education Agencies (1998). *Their Future...Our Guidance, Iowa IEP Guidebook.* Des Moines, IA: Iowa Department of Education, Bureau of Children, Family and Community Services.

Maine Department of Education, Division of Special Services, Maine CITE Project. (1995). *Educator's Commonly Asked Questions About Assistive Technology Devices & Services.* Augusta, ME: Author.

Missouri Department of Elementary and Secondary Education, Division of Special Education. *Assistive Technology: A Publication to Guide Missouri Educators In the Application of Assistive Technology Devices and Services for Students with Disabilities.* Kansas City, MO: Author.

Mountain Plains Regional Resource Center. (1997). *Assistive Technology for Students with Disabilities Under the Individuals with Disabilities Education Act: Guidelines for Educators and Administrators.* Logan, UT: Author.

Nebraska Department of Education, Special Education Advisory Council, Office of Special Populations. (1997). *Assistive Technology in Special Education: Technical Assistance Document.* Lincoln, NE: Nebraska Department of Education, Office of Special Programs, and Nebraska Assistive Technology Project.

Websites & Organizations

Websites & Organizations

Websites

There are a number of websites available to help interested people find information regarding assistive technology. The following websites are just a few that may be helpful.

Iowa Area Education Agencies Assistive Technology
http://lserver.aea14.k12.ia.us/atteam/at/iowa

This website gives internet users a wide variety of ways to link to information regarding assistive technology. Here is a list of some of the links available at this website:

- Assistive Technology Definitions
- Assistive Technology-Iowa Vision & Mission
- Assistive Technology Interactive Network (ATIN)
- Assistive Technology Vendors
- Computer Maintenance Utilities
- Contact Directory Regional Assistive Technology
- Disability Resources
- Funding Resources
- Information Exchange Page
- Liaison Belief Statements
- Link to Free Downloads Hyperstudio, Intellikeys, Ke:nx, Shareware, Aided Language Stimulation, BoardMaker, Picture It
- Search Engines

National Center to Improve Practice In Special Education Through Technology, Media, & Materials
http://www.edc.org/FSC/NCIP/links.html

This website provides an ever-expanding list of WWW sites that provide information, resources, and yet more links relating to technology and special education. Here is a list of some of the links available at this web site:

- Technology And Disabilities
- Disability Resources

Notes:

Notes:

- Disability Specific Sites

  Visual Impairments
  Deaf/Hearing Impairments
  Learning Disabilities
  Cognitive/Developmental Disabilities
  Autism And Related Disorders
  Severe Speech And Physical Impairments
  Add (Attention Deficit Disorder)

- Special Education
- Family And Parent Support
- Companies Specializing In Assistive Technology For Special Needs
- Government Resources
- Organizations And Associations
- Universities With Special Education Resources
- Www Accessibility
- Funding For Assistive Technology
- Educational Technology

Iowa Program for Assistive Technology
http://www.uiowa.edu/infotech/

The Iowa Program for Assistive Technology website offers a number of resources on the internet and has a number of their publications available online. The following is a list of those publications:

- **IPAT Selecting and Obtaining Assistive Technology**
- **IPAT Funding Strategies**
- **Your Legal Rights to Assistive Technology**
- **Assistive Technology Tips:**
  Around the House:
  -Independent living tips to assist with house cleaning and storage.
  Cleanliness Is Next To...
  -Independent living aids for personal care and grooming.
  What's For Dinner?
  -Independent living tips for cooking and dining.
  You Can Get There From Here:
  -Reaching and mobility aids for independent living.
  Zip It Up:
  -Clothing adaptations and dressing aids for independent living.
- **Best Practices for Vendors of Assistive Technology**
- **InfoTech Newsletters**

Organizations

National Level

Alliance for Technology Access (ATA)
1307 Jolano Avenue
Albany, CA 94706

Council of Administrators of Special Education (CASE)
615 16th Street N.W.
Albuquerque, NM 87104

Colorado Easter Seals
Center for Adapted Technology
5755 W. Alameda
Lakewood, CO 80226

International Society for Technology in Education
1787 Agate Street
Eugene, OR 97403

ISAAC
P.O. Box 1762
Toronto, Ontario
M464A3 Canada

Macomb Projects, College of Education
27 Horrabin Hall
Western Illinois University
Macomb, IL 61455

National Technical Assistance Center for Technology Related Assistance (RESNA)
1700 N. Moore Street
Suite 1540
Arlington, VA 2209-1903

Technology and Media Division (TAM) The Council for Exceptional Children
1920 Association Drive
Reston, VA 22091

Trace Research and Development Center
University of Wisconsin-Madison
S151 Waisman Center
1500 Highland Avenue
Madison, WI 53705

Notes:

Notes:

State Level

InfoTech
(Assistive Technology Information Network & Used Equipment Referral Service)

Iowa Program for Assistive Technology Program
Iowa University Affiliated Program
University Hospital School
The University of Iowa
Iowa City, IA 52242

Email address: Infotech@uiowa.edu
Website address: http://www.uiowa.edu/infotech/

Iowa Brain Injury Network
University Hospital School, Rm 257
Iowa University Affiliated Program
The University of Iowa
Iowa City, IA 52242-1011

Iowa Braille & Sight Saving School
1002 G. Avenue
Vinton, IA 52349

Iowa Department of Education
Bureau of Children, Family, & Community Services
Grimes State Office Building
Des Moines, IA 50319

Website addres:
http://www.state.ia.us/educate/depteduc/index.html

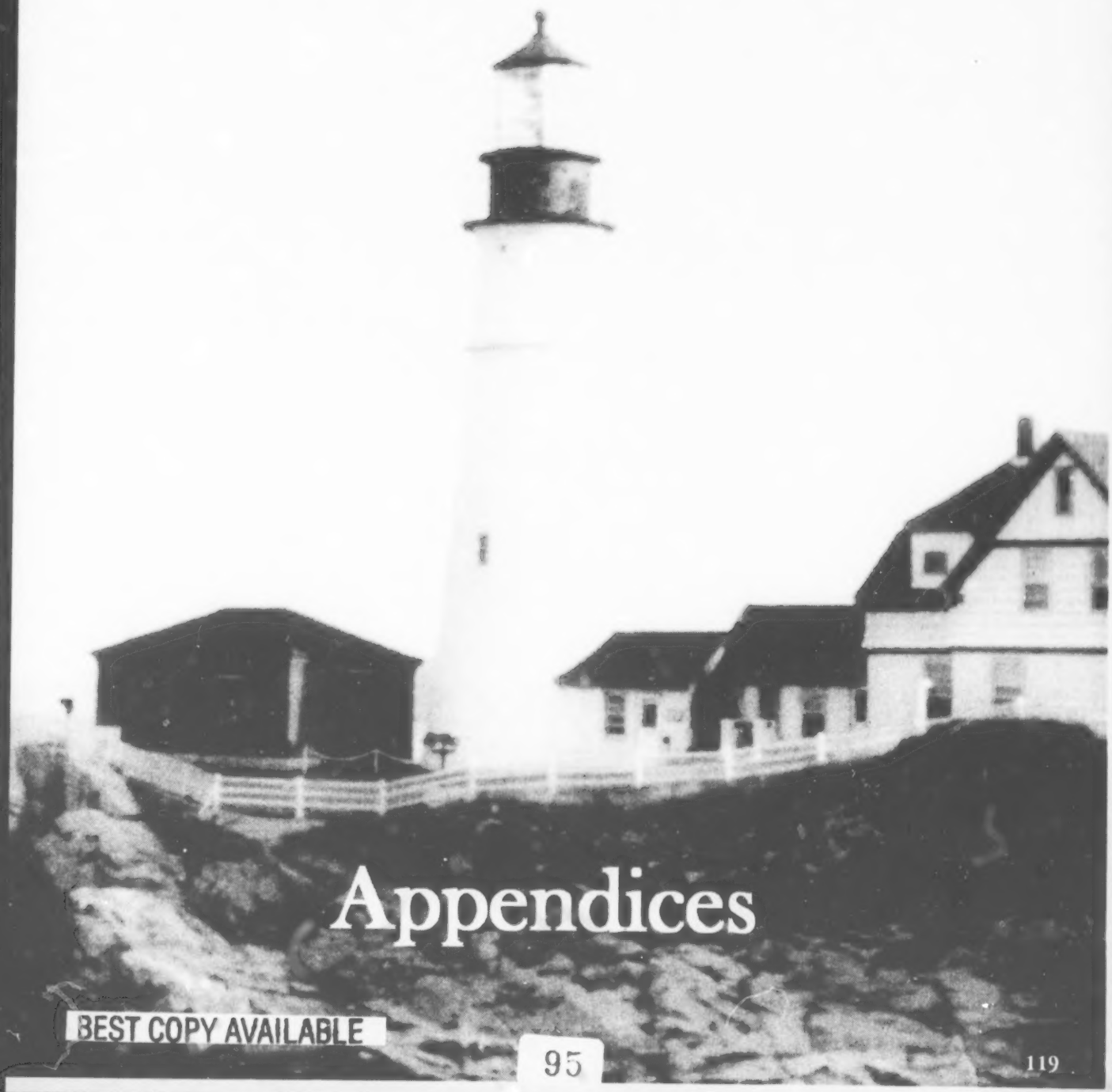
References

References

Chambers, A.C. (1997). *CASE/TAM Assistive Technology Policy & Practice Series: Has Technology Been Considered? A Guide for IEP Teams* . Reston, VA: Council of Administrators of Special Education and the Technology and Media Division of The Council for Exceptional Children.

Maine Department of Education, Division of Special Services, Maine CITE Project. (1995). *Educator's Commonly Asked Questions About Assistive Technology Devices & Services.* Augusta, ME: Author.

Section IX



Appendices

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Appendix A

Examples of Assistive Technology

This is a list of educationally significant devices, products, systems, and areas that are considered to fall within the definition of assistive technology. This list is not intended to be all inclusive, but does include low and high technlogy items.

Ambulation
canes
cane accessories
crutches
crutch accessories
walkers
walker accessories

Architectural Access
bath tubs
modified showers
toilets
bathroomsinks
shelves
cabinets
sinks/appliances
doors/auto open
handles
lighting
safety/security
elevators
wheelchair lifts
chair-stair lift
ceiling track lift
pool lifts
ramps
drinking fountains

Communication
light pointers
manual page turners
electric page turners
reading machines
bookholders
writing aids
typewriters
typing aids
modified keyboards
telephone access
signal system
communication boards
augmentative communication devices (electronic)
television adaptions
personal voice amplification

Computer Software
educational programs
recreation/games
communication programs
voice recognition
talking
switch operated
assessment/evaluation/training
tools/word processing/database
large print
special access

Computer Hardware
special computer systems
keyboards
printers
computer supplies
computer work stations
computer peripherals
expanded keyboards
other keyboards
key guards
voice synthesizers
voice recognition systems
Braille printers
tactile printers
visual accessories
cursor control
interface adaptations
other adaptations

Environmental Controls
environmental control systems
environmental control components

Home Management
food preparation
housekeeping
shopping aids

Mobility
wheelchair control
manual wheelchair
adult light weight
child light weight
standing wheelchair
power wheelchair
power standing wheelchair
3-wheeled mobility device
other mobility devices
wheelchair trays
portable ramps
batteries
power conversion
other accessories
wheelchair parts

Orthotics
restraints
supports
helmets
braces
splints
foot orthosis

Personal Care
feeding devices
dishes/utensils
feeding accessories
grooming/hygiene
mechanical transfer lift
wheeled bathchair/commode
stationary commode
toileting accessories
incontinent supplies
shower/bath chair
bathing accessories
reaching/carrying
grab bars/grips/handles
transfer board

Recreation
crafts
sewing
board games
other games
toys
electronics
music
photography
modified sports equipment
sports activities
playground equipment

Seating
back supports
postural support system
postural support hardware
bolster or corner chairs
other therapeutic seats
pressure monitors
decubitis cushion
wheelchair cushion
other cushions

Technology for Hearing
alert/signal systems
telephone adaptations
TV decoders
TV amplifiers
personal amplification
FM amplification system
infrared amplification system
audio loop systems
TDDs/TTYs
hearing aids

Technology for Vision
Braille
clock/watches
sensors/safety/security
labeling
large button phone
speaker phone
large print books
taped/audio books
magnifiers
magnification system
talking equipment
calculators
other devices

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Examples of Assistive Technology (cont'd)

Therapeutic Aids
sensory integration
perceptual motor
gross motor
fine motor
crawling/scooting
ambulation training
balance training
prone standers
upright frames
supine standers
parapodiums
side lying boards
stand tables
treatment tables
elevated mat tables
rolls/inclines
mats
positioning
strengthening
exercise equipment

Transportation
vehicles
vehicle conversions
driving controls
assistive accessories
seat belts
wheelchair restrain systems
wheelchair lifts
ramps
wheelchair loaders
wheelchair carriers
vehicle access

Vocational/Educational
work stations
desks
classroomequipment
tools
office equipment
adjustable tables
education/instruction
vocational assessment training
literature/books
arm/wrist supports

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Appendix B

Accommodations Checklist

PHYSICAL ARRANGEMENT OF ROOM:

_____ seating student near the teacher
_____ seating student near a positive role model
_____ standing near the student when giving directions or presenting lessons
_____ avoiding distracting stimuli (air conditioner, high traffic area, etc.)
_____ increasing distance between desks
_____ additional accommodations:_____

LESSON PRESENTATION:

_____ pairing students to check work
_____ writing key points on board
_____ providing peer tutoring
_____ providing visual aids, large print, films
_____ providing peer notetaker
_____ making sure directions are understood
_____ including a variety of activities during each lesson
_____ repeating directions to the student after they have been given to the class: then have him/her repeat and explain direction to teacher
_____ providing written outline
_____ allowing student to tape record lessons
_____ having child review key points orally
_____ teaching through multi-sensory modes, visual, auditory, kinestetics, olfactory
_____ using computer-assisted instruction
_____ accompany oral directions with written directions for child to refer to blackboard or paper
_____ providing a model to help students, post the model and refer to it often
_____ providing cross age peer tutoring
_____ assisting the student in finding the main idea underlying, highlighting, cue cards, etc.
_____ breaking longer presentations into shorter segments
_____ additional accommodations:_____

ASSIGNMENTS/WORKSHEETS:

_____ giving extra time to complete tasks
_____ simplifying complex directions
_____ handing worksheets out one at a time
_____ reducing the reading level of the assignments
_____ requiring fewer correct responses to achieve grade (quality vs. quantity)
_____ allowing student to tape record assignments/homework
_____ providing a structured routine in written form
_____ providing study skills training/learning strategies
_____ giving frequent short quizzes and avoiding long tests
_____ shortening assignments; breaking work into smaller segments
_____ allowing typewritten or computer printed assignments prepared by the student or dictated by the student and recorded by someone else if needed.
_____ using self-monitoring devices
_____ reducing homework assignments
_____ not grading handwriting

_____ student should be allowed to use cursive or manuscript writing
_____ reversals and transpositions of letters and numbers should not be marked wrong, reversals or transpositions should be pointed out for correction
_____ do not require lengthy outside reading assignments
_____ teacher monitor students' self-paced assignments (daily, weekly, bi-weekly)
_____ arrangements for homework assignments to reach home with clear, concise directions
_____ recognize and give credit for student's oral participation in class
_____ additional recommendations:_____

TEST TAKING:
_____ allowing open book exams
_____ giving exam orally
_____ giving take home tests
_____ using more objective items (fewer essay responses)
_____ allowing student to give test answers on tape recorder
_____ giving frequent short quizzes, not long exams
_____ allowing extra time for exam
_____ reading test item to student
_____ avoid placing student under pressure of time or competition
_____ additional accommodations:_____

ORGANIZATION:
_____ providing peer assistance with organizational skills
_____ assigning volunteer homework buddy
_____ allowing student to have an extra set of books at home
_____ sending daily/weekly progress reports home
_____ developing a reward system for in-schoolwork and homework completion
_____ providing student with a homework assignment notebook
_____ additional accommodations:_____

BEHAVIORS:
_____ use of timers to facilitate task completion
_____ structure transitional and unstructured times (recess, hallways, lunchroom, locker room, library, assembly, field trips, etc.)
_____ praising specific behaviors
_____ using self-monitoring strategies
_____ giving extra privileges and rewards
_____ keeping classroom rules simple and clear
_____ making "prudent use" of negative consequences
_____ allowing for short breaks between assignments
_____ cueing student to stay on task (nonverbal signal)
_____ marking student's correct answers, not his mistakes
_____ implementing a classroom behavior management system
_____ allowing student time out of seat to run errands, etc.
_____ ignoring inappropriate behaviors not drastically outside classroom limits
_____ allowing legitimate movement
_____ contracting with the student
_____ increasing the immediacy of rewards
_____ implementing time-out procedures
_____ additional accommodations:_____

MEDICATION:
name of physician: _____
phone: _____
medication(s): _____
schedule: _____
schedule: _____
monitoring of medication(s)_____daily _____weekly _____as needed basis
administered by staff member responsible to insure student takes medication and documentation:
: _____

SPECIAL CONSIDERATIONS:
_____ suggesting parent program(s)
_____ monitoring student closely on field trip
_____ inservicing all relevant school personnel on child's handicap
_____ altering bus driver
_____ suggesting agency involvement
_____ providing group/individual counseling
_____ providing social skills group experiences
_____ developing intervention strategies for transitional periods (e.g. cafeteria, physical education, etc.)
_____ providing specific time limit for extra help outside of classroom time
_____ additional accommodations:_____

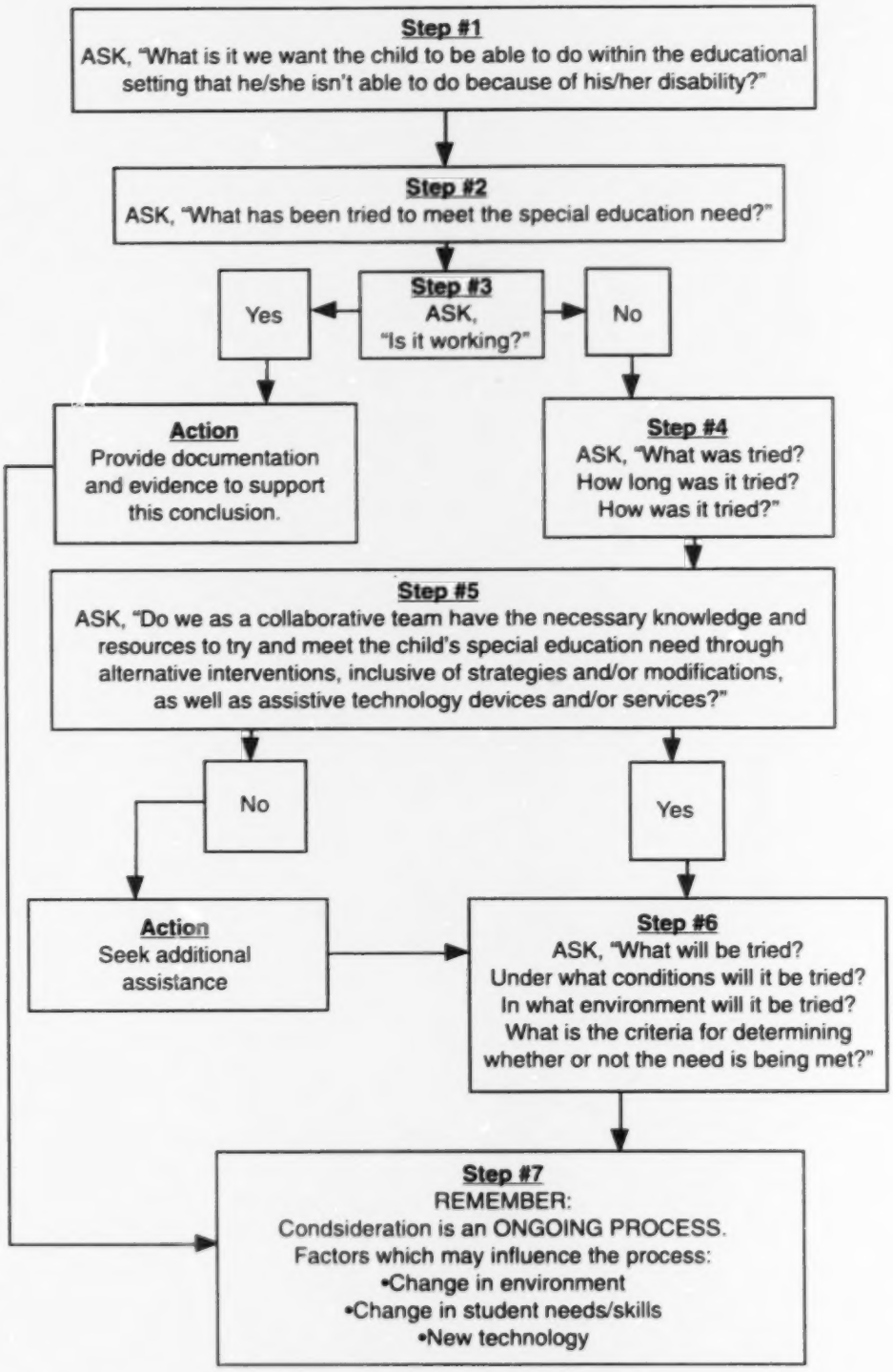
Comments:

Participants: (name and title)

Case manager's signature:

Appendix C

Addressing Assistive Technology on the IEP*
A Flowchart of Primary Questions


Step #1
ASK, "What is it we want the child to be able to do within the educational setting that he/she isn't able to do because of his/her disability?"
Step #2
ASK, "What has been tried to meet the special education need?"
Step #3
ASK, "Is it working?"
Yes
No
Action
Provide documentation and evidence to support this conclusion.
Step #4
ASK, "What was tried? How long was it tried? How was it tried?"
Step #5
ASK, "Do we as a collaborative team have the necessary knowledge and resources to try and meet the child's special education need through alternative interventions, inclusive of strategies and/or modifications, as well as assistive technology devices and/or services?"
No
Yes
Action
Seek additional assistance
Step #6
ASK, "What will be tried? Under what conditions will it be tried? In what environment will it be tried? What is the criteria for determining whether or not the need is being met?"
Step #7
REMEMBER:
Condsideration is an ONGOING PROCESS.
Factors which may influence the process:
•Change in environment
•Change in student needs/skills
•New technology

* Adapted from: Has Technology Been Considered? A guide for IEP teams. Chambers, A.C., (1997).

Appendix D

Logo

* School or AEA Name

Individualized Education Program [IEP] Date of Meeting: _____/_____/_____
(Month/Day/Year)

Student _____ Birthdate: _____/_____/_____
Last (legal) First (no nicknames) M.I. (Month/Day/Year)

Data Elements On this Page Developed by Each AEA

(example follows)

Parental Due Process Rights were reviewed by: _____

Persons Present at Meeting* and Position or Relationship to Student

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

* **Signature or listing only indicates presence at meeting, not approval or acceptance of the IEP**

CENTER LAKE AREA EDUCATION AGENCY

Individualized Education Program [IEP]

Date of Meeting: ____/____/____
(Month/Day/Year)

Meeting Type
[ ] Initial
[ ] Review
[ ] Revision
[ ] Reevaluation

Student _____
Last (legal) First (no nicknames) M.I.

Birthdate: ____/____/____ Current Grade: _____ Soc. Sec. #: ____-____-____
(Month/Day/Year)

Resident District: _____ Attending District: _____

[√] if: [ ] Tuitioned or [ ] Open Enrollment Attending Building: _____

[ ] Parent
[ ] Foster Parent
[ ] Guardian
[ ] Surrogate

Name: _____ Home Phone: _____

Address: _____ Work Phone: _____

_____

Student Address: _____ Phone: _____

(if different from above) _____

_____

Date this IEP will be implemented: ____/____/____ Duration of this IEP: _____

Annual IEP Review is due before: ____/____/____ Reevaluation is due before: ____/____/____

Parent Notification of IEP Meeting: Method: _____ by: _____

Describe attempts to involve parents (if not in attendance): _____

_____

Parental Due Process Rights were reviewed by: _____

Persons Present at Meeting* and Position or Relationship to Student

_____ Parent _____ Student

_____ Parent _____ _____

_____ LEA Rep _____ _____

_____ Reg Ed Tchr _____ _____

_____ Sp Ed Tchr _____ _____

Additional, Outside Agency Sources of Written Input: Name/Agency & Date of Report

_____ _____ _____ _____

* **Signature or listing only indicates presence at meeting, not approval or acceptance of the IEP**

Designation:	Model/Level:	Weighting:	Roster:

Student and Family Vision

In developing the IEP, the team must consider: the strengths of the student, the concerns of the parents for enhancing the education of their child, and relevant results of the most recent evaluation or reevaluation. Additionally, the team must consider:

- the need for positive behavior interventions, strategies, and supports for any student whose behavior interferes with his or her learning or the learning of others
- communication needs, particularly if the student is deaf or hard of hearing
- Braille instruction needs of students with visual impairments
- needs related to English language proficiency
- the need for assistive technology services or devices
- health needs

Present Levels of Educational Performance: This statement must include a description of:

- the effect of the disability on the student's involvement and progress in the general curriculum , or
- the effect of the disability on the participation of a preschool child in appropriate activities, and
- transition needs (required to be addressed at age 14 and older).

Name: _____ Date: ___/___/___ Page ___ of ___

Annual Goal and Progress Indicators I-SEE Goal Code:

Baseline (What is the student doing now?): _____

_____

Goal: include **conditions** (when and how the student will perform); **behavior** (what the student will do); and **criterion** (acceptable level of performance)

_____

_____

Evaluation procedures (how progress will be measured): _____

_____

Position(s) responsible for services: _____

Major milestones/Short term objectives	Comments/Progress Notes/Dates Achieved

Update and provide to parents with report cards

1 = This goal has been met.
2 = Progress has been made towards the goal. It appears that the goal will be met by the time the IEP is reviewed.
3 = Progress has been made towards the goal but the goal may not be met by the time the IEP is reviewed.
4 = Progress is not sufficient to meet this goal by the time the IEP is reviewed. Instructional strategies will be changed.
5 = Your child did not work on this goal during this reporting period (provide an explanation to the parents).

___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5
___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5
___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5

At the end of the IEP goal period, answer the following questions

Progress: Is the child making progress expected by the IEP team? (√ one)
[ ] Goal met
[ ] Goal not met; but performance improved
[ ] No change or poorer performance
[ ] Insufficient data for decision making

Independence: Is the child more independent in the goal area? (√ one)
[ ] Greater independence
[ ] Unchanged independence
[ ] Less independence
[ ] Insufficient data for decision making

Comparison to peers or standard: How does the child's performance compare with general education peers or standards? (√ one)
[ ] Comparison to age or grade level peers or standards not appropriate
[ ] Less discrepancy from peers or standard
[ ] Same discrepancy from peers or standard
[ ] More discrepancy from peers or standard
[ ] Insufficient data for decision making

Goal Status: Will work in the goal area be discontinued or continued? (√ one)

Discontinue goal area
[ ] Success, no further special education needs in goal area
[ ] Goal area is not a priority for the next year
[ ] Limited progress, plateau

Continue goal area
[ ] More advanced work in goal area
[ ] Continue as written

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Name: _____ Date: ___/___/___ Page ___ of ___

Annual Goal and Progress Indicators I-SEE Goal Code:

Baseline (What is the student doing now?): _____

_____

Goal: include **conditions** (when and how the student will perform); **behavior** (what the student will do); and **criterion** (acceptable level of performance)

_____

_____

Evaluation procedures (how progress will be measured): _____

_____

Position(s) responsible for services: _____

Major milestones/Short term objectives	Comments/Progress Notes/Dates Achieved

At the end of the IEP goal period, answer the following questions

Progress: Is the child making progress expected by the IEP team? (√ one)
- [ ] Goal met
- [ ] Goal not met; but performance improved
- [ ] No change or poorer performance
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Independence: Is the child more independent in the goal area? (√ one)
- [ ] Greater independence
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- [ ] Comparison to age or grade level peers or standards not appropriate
- [ ] Less discrepancy from peers or standard
- [ ] Same discrepancy from peers or standard
- [ ] More discrepancy from peers or standard
- [ ] Insufficient data for decision making

Goal Status: Will work in the goal area be discontinued or continued? (√ one)

Discontinue goal area
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- [ ] Goal area is not a priority for the next year
- [ ] Limited progress, plateau

Continue goal area
- [ ] More advanced work in goal area
- [ ] Continue as written

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Name: _____ Date: ___/___/___ Page ___ of ___

Annual Goal and Progress Indicators I-SEE Goal Code:

Baseline (What is the student doing now?): _____

_____

Goal: include **conditions** (when and how the student will perform); **behavior** (what the student will do); and **criterion** (acceptable level of performance)_

_____

_____

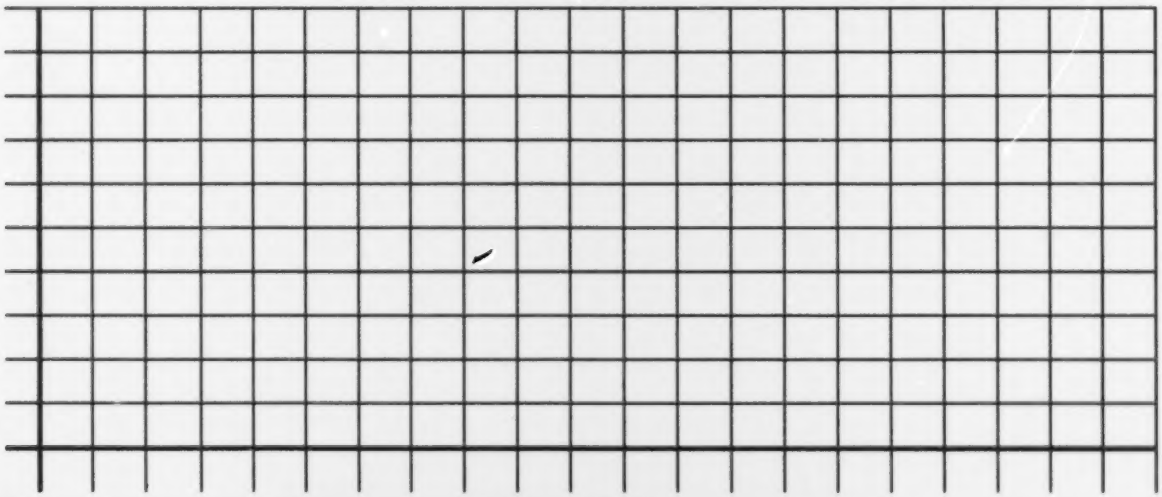
Evaluation procedures (how progress will be measured): _____

_____

Position(s) responsible for services: _____

Major milestones: 1: _____ 2: _____

3: _____ 4: _____



Update and provide to parents with report cards

1 = This goal has been met.
2 = Progress has been made towards the goal. It appears that the goal will be met by the time the IEP is reviewed.
3 = Progress has been made towards the goal but the goal may not be met by the time the IEP is reviewed.
4 = Progress is not sufficient to meet this goal by the time the IEP is reviewed. Instructional strategies will be changed.
5 = Your child did not work on this goal during this reporting period (provide an explanation to the parents).

___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5
___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5
___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5	___/___/___ 1 2 3 4 5

At the end of the IEP goal period, answer the following questions

Progress: Is the child making progress expected by the IEP team? (√ one)
[ ] Goal met
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[ ] Comparison to age or grade level peers or standards not appropriate
[ ] Less discrepancy from peers or standard
[ ] Same discrepancy from peers or standard
[ ] More discrepancy from peers or standard
[ ] Insufficient data for decision making

Goal Status: Will work in the goal area be discontinued or continued? (√ one)

Discontinue goal area
[ ] Success, no further special education needs in goal area
[ ] Goal area is not a priority for the next year
[ ] Limited progress, plateau

Continue goal area
[ ] More advanced work in goal area
[ ] Continue as written

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Name: _____ Date: ___/___/___ Page ___ of ___

Annual Goal and Progress Indicators I-SEE Goal Code:

Baseline (What is the student doing now?): _____

_____

Goal: include **conditions** (when and how the student will perform); **behavior** (what the student will do); and **criterion** (acceptable level of performance)

_____

_____

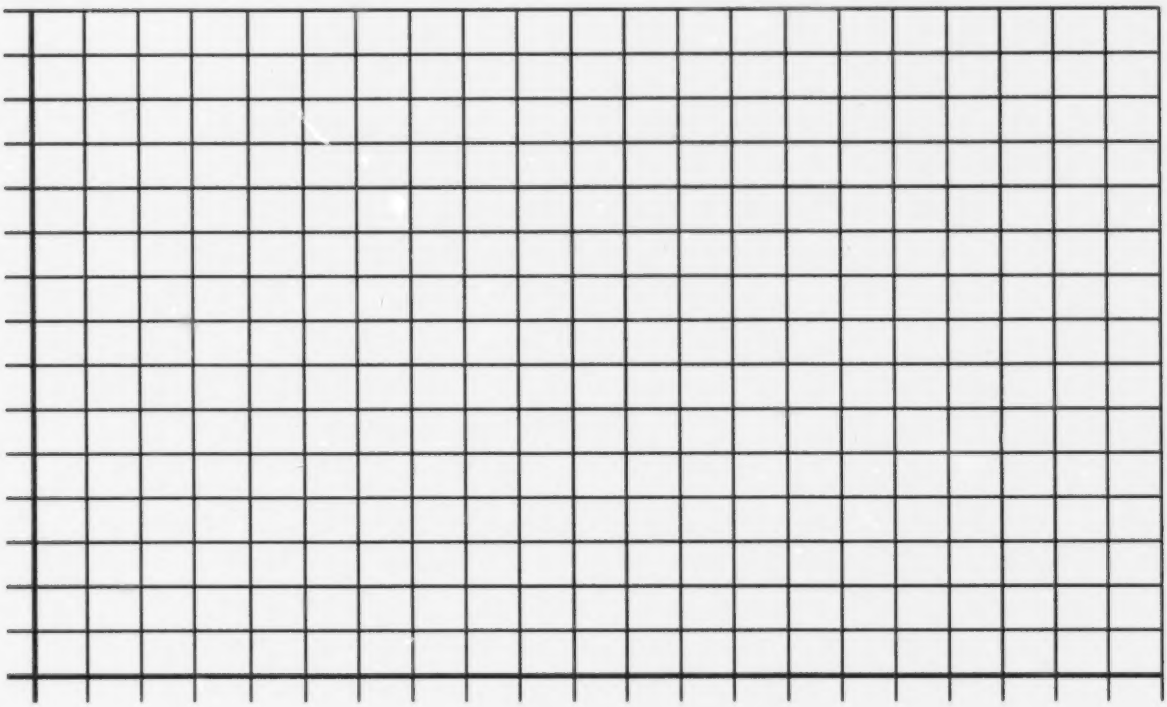
Evaluation procedures (how progress will be measured): _____

_____

Position(s) responsible for services: _____

Major milestones: 1: _____ 2: _____

3: _____ 4: _____



At the end of the IEP goal period, answer the following questions	
Progress: Is the child making progress expected by the IEP team? (√ one) [ ] Goal met [ ] Goal not met; but performance improved [ ] No change or poorer performance [ ] Insufficient data for decision making	**Independence:** Is the child more independent in the goal area? (√ one) [ ] Greater independence [ ] Unchanged independence [ ] Less independence [ ] Insufficient data for decision making
Comparison to peers or standard: How does the child's performance compare with general education peers or standards? (√ one) [ ] Comparison to age or grade level peers or standards not appropriate [ ] Less discrepancy from peers or standard [ ] Same discrepancy from peers or standard [ ] More discrepancy from peers or standard [ ] Insufficient data for decision making	**Goal Status:** Will work in the goal area be discontinued or continued? (√ one) **Discontinue goal area** [ ] Success, no further special education needs in goal area [ ] Goal area is not a priority for the next year [ ] Limited progress, plateau **Continue goal area** [ ] More advanced work in goal area [ ] Continue as written

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Name: _____ Date: ___/___/___ Page ___ of ___

Transition Planning: Age 14 and older address course of study; age 16 and older, address all transition items. Consider the student's post-high school outcomes and the goals of this IEP, based on the needs, interests, and preferences of the student.

Focus of student's courses of study (e.g., vocational education program, advanced placement classes, etc.)

_____

_____

_____

_____

_____

Transition services & activities	Agency/position responsible
Will instruction be provided to this student? [ ] Yes (explain) [ ] No (provide justification)	
Will support or related services be provided to this student? [ ] Yes (explain) [ ] No (provide justification)	
Will community experiences be provided to this student? [ ] Yes (explain) [ ] No (provide justification)	
Will activities and services to develop employment and other post-high school adult living objectives be provided? [ ] Yes (explain) [ ] No (provide justification)	
[ ] Yes [ ] No Will activities and services to develop daily living skills be provided?	
[ ] Yes [ ] No Is a functional vocational evaluation required?	

Vocational Education: [ ] Regular [ ] Modified — describe below [ ] Specially designed — requires goal(s)

_____

Notice of transfer of rights provided: ___/___/___ **Transfer of rights will occur at age 18:** (___/___/___)

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Name: _____ Date: ___/___/___ Page ___ of ___

Linkages to community service providers			
Linkage with:	**Contacted by:**	**Timeline:**	**Outcome:**

Considerations for the least restrictive environment. What accommodations, modifications, and adaptations does the individual require to be successful in the general education environment? Why can't these accommodations, modifications, and adaptations be provided within the general education environment? What supports are needed to assist the teacher and other personnel to provide these accommodations, modifications, and adaptations?

[ ] Yes [ ] No Are **assistive technology** services or devices required? If yes, describe in appropriate section(s).

[ ] Yes [ ] No Does this student require a **functional behavioral assessment and a behavioral intervention plan**? If yes, include all necessary information in this IEP.

Will this student participate in all district-wide assessments?

[ ] Yes [ ] Yes, with modifications (complete documentation form) [ ] No (alternate assessment, complete documentation form)

Physical Education: [ ] Regular [ ] Modified — describe below [ ] Specially designed — requires goal(s)

Name: _____ Date: __/__/__ Page ___ of ___

Description of Special Education Services: instructional, support and related services

Service	Time & Frequency	Setting for Special Education Services
_____ ___	_____	[ ] General ed. [ ] Special ed. [ ] _____
_____ ___	_____	[ ] General ed. [ ] Special ed. [ ] _____
_____ ___	_____	[ ] General ed. [ ] Special ed. [ ] _____
_____ ___	_____	[ ] General ed. [ ] Special ed. [ ] _____
_____ ___	_____	[ ] General ed. [ ] Special ed. [ ] _____
_____ ___	_____	[ ] General ed. [ ] Special ed. [ ] _____
_____ ___	_____	[ ] General ed. [ ] Special ed. [ ] _____
_____ ___	_____	[ ] General ed. [ ] Special ed. [ ] _____
_____ ___	_____	[ ] General ed. [ ] Special ed. [ ] _____

Description of special education service delivery: _____

[ ] Yes [ ] No Are **specialized transportation services** required that are related to the disability? If yes, describe.

Setting considerations: How would providing special education services and activities in the general education environment impact this student? How would providing special education services and activities in the general education environment impact other students?

Removal from general education: _____%

Options considered for the setting of special education services: _____

Extended School Year Services

[ ] Yes [ ] No Are extended school year services (ESYS) required? If yes, the IEP must describe ESYS services.

Progress reports

Parents: You will be informed of your child's IEP progress _____ times per year. You will receive:

[ ] An IEP report with report cards and progress reports [ ] Updated copies of the IEP goal pages

[ ] _____

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Name: _____ Date: __/__/__ Page ___ of ___

Additional Information-specify purpose

Name: _____ Date: __/__/__ Page ___ of ___

?? Community Schools Individualized Education Plan Report Card			
1st report __/__/__	2nd report __/__/__	3rd report __/__/__	4th report __/__/__
5th report __/__/__	6th report __/__/__	7th report __/__/__	8th report __/__/__

Goal Area:			
1st report _____	2nd report _____	3rd report _____	4th report _____
5th report _____	6th report _____	7th report _____	8th report _____
Comments:			

Goal Area:			
1st report _____	2nd report _____	3rd report _____	4th report _____
5th report _____	6th report _____	7th report _____	8th report _____
Comments:			

Goal Area:			
1st report _____	2nd report _____	3rd report _____	4th report _____
5th report _____	6th report _____	7th report _____	8th report _____
Comments:			

Goal Area:			
1st report _____	2nd report _____	3rd report _____	4th report _____
5th report _____	6th report _____	7th report _____	8th report _____
Comments:			

Progress Codes	
	1 = This goal has been met. 2 = Progress has been made towards the goal. It appears that the goal will be met by the time the IEP is reviewed. 3 = Progress has been made towards the goal but the goal may not be me by the time the IEP is reviewed. 4 = Progress is not sufficient to meet this goal by the time the IEP is reviewed. Instructional strategies will be changed. 5 = Your child did not work on this goal during this reporting period (provide an explanation to the parents).

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Name: _____ Date: __/__/__ Page ___ of ___

?? Community Schools Individualized Education Plan Report Card			
1st report __/__/__	2nd report __/__/__	3rd report __/__/__	4th report __/__/__

Goal Area:			
1st report _____	2nd report _____	3rd report _____	4th report _____
Comments:			

Goal Area:			
1st report _____	2nd report _____	3rd report _____	4th report _____
Comments:			

Goal Area:			
1st report _____	2nd report _____	3rd report _____	4th report _____
Comments:			

Goal Area:			
1st report _____	2nd report _____	3rd report _____	4th report _____
Comments:			

Progress Codes	
	1 = This goal has been met. 2 = Progress has been made towards the goal. It appears that the goal will be met by the time the IEP is reviewed. 3 = Progress has been made towards the goal but the goal may not be me by the time the IEP is reviewed. 4 = Progress is not sufficient to meet this goal by the time the IEP is reviewed. Instructional strategies will be changed. 5 = Your child did not work on this goal during this reporting period (provide an explanation to the parents).

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Name: _____ Date: ___/___/___ Page ___ of ___

Documentation for Determining Participation in District-wide Assessment

The Individuals with Disabilities Education Act presupposes that all special education students will fully participate in all district-wide assessments in the same manner as their non-disabled peers unless a staffing team determines that: (1) such participation is not appropriate without reasonable accommodations or (2) such assessment is not appropriate and identifies an alternate form of assessment.

I. Determine which of the following statements best describes the student's *curriculum* and then determine the appropriate assessment approach.

		District-wide Assessment		
	General Description of **Curriculum** Presented	No Accommodations Needed	Accommmodations Needed	Alternate Assessment
A.	Student participates with no or only slight modification in general academic **curriculum**.			
B.	Student participates with significant modification to the general academic **curriculum**.			
C.	Student does not participate in general academic **curriculum**. Student receives an alternative **curriculum**.			

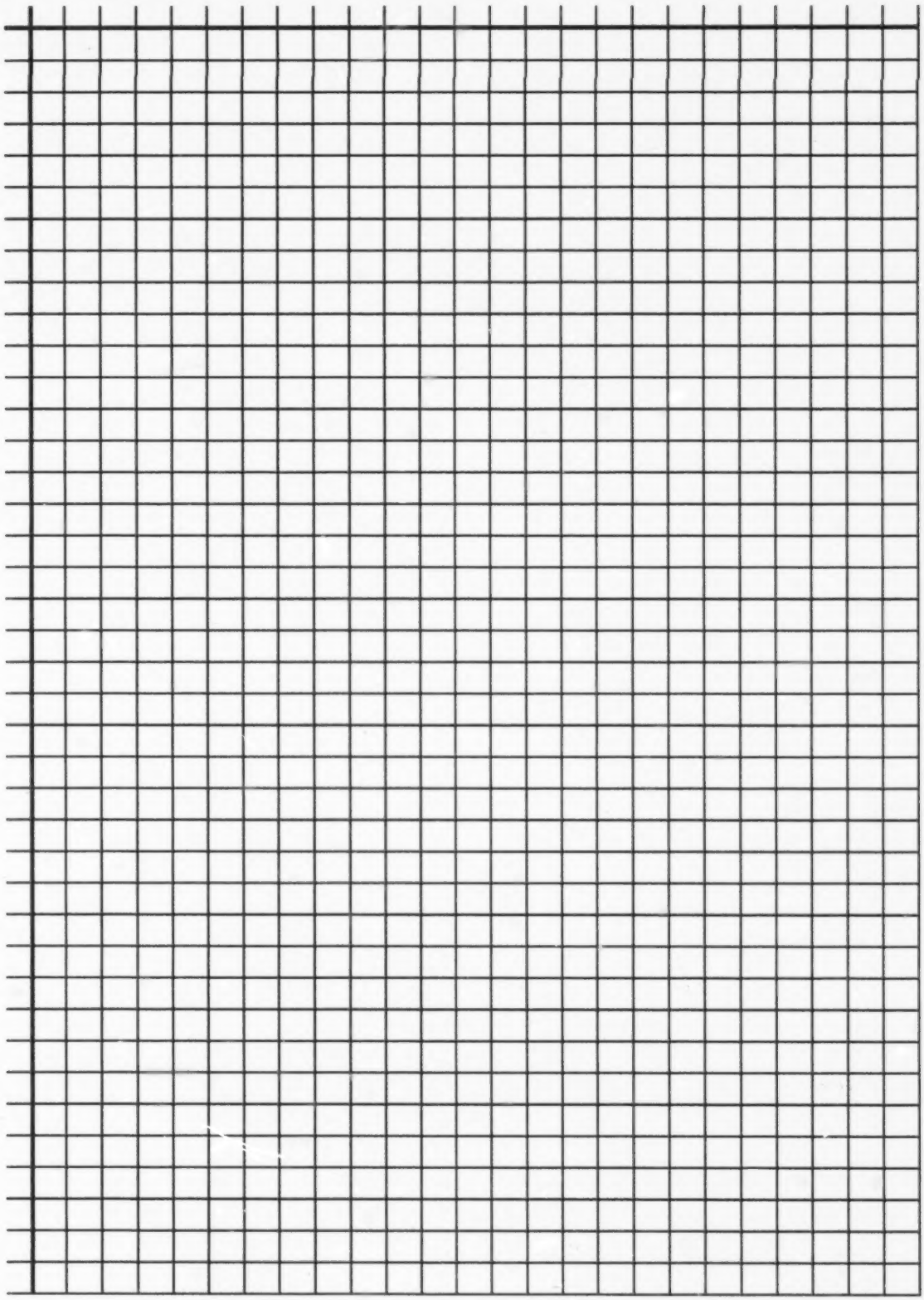
II. **Accommodations**: List accommodations necessary for student to participate in district-wide assessment.

III. **Alternate Assessment**

1. Describe why district wide assessment is not appropriate.

2. Describe how student will be assessed.

Name: _____ Date: __/__/__ Page ___ of ___



Appendix E

IEP Team Consideration of Assistive Technology

The following forms are designed to provide IEP teams with a conceptual framework for assistive technology considerations that will be neither too expansive or restrictive. In addition, the forms provide an option for documenting assistive technology considerations to satisfy the IEP requirements of IDEA. The forms are divided into different categories:

reading	writing	access to educational programs
math	listening	orientation/mobility/ambulation
study skills	speech/language	daily living/recreation/leisure
transition		

If a student has instructional, developmental or access needs in one or more of these areas, the IEP team can use the corresponding form(s) to assist in their consideration of a variety of assistive technology devices and services to address that area. The forms provide space to document both affirmative and negative decisions about the need for assistive technology by area. The team can use the forms to indicate that a general type of assistive technology is included in the IEP and then specify more detail in the IEP. The team can also use the forms to document that assistive technology is not needed by noting that other interventions and/or adaptations are to be used to address the student's needs in that area. For students with limited IEPs that only address one area (such as speech), the form for that area could simply be attached to the IEP as documentation of the special factors consideration. For students with IEPs that address many areas, the documentation will be more lengthy, but the appropriate forms could still be attached to the IEP.

While the forms do not provide an all inclusive list of assistive technology for an area, they do provide IEP teams with an idea of the range of assistive technology that can and should be considered to address various needs. The lists do not include instructional software or other similar electronic media and materials that might be used to teach skills or remediate skill deficits in an area. Such technology is far too expansive to include in a list and is typically considered to be part of general instructional media, like textbooks, and other materials that all students use to learn.

These forms can and should be used in conjunction with a structured decision making process, for example, the SETT framework describes team consideration of the Student (S), Environment (E), Tasks (T), and finally Tools (T) in making decisions about assistive technology. The tools include assistive technology along with non-technology tools that could be used address needs. These lists could be used within a SETT decision making process to assist teams considering an appropriate range of assistive technology tools, especially if their own experience with assistive technology is somewhat limited.

While these lists are not meant to be inclusive of every possible assistive technology device a student might need, when used with a good decision making process, they can encourage appropriate depth and breadth of considerations along with a consistent procedure for documentation.

❑ READING is addressed in the IEP. Consider assistive technology that:

Enhances standard text and graphics ❑ Included in the IEP	• corrective lenses (eyeglasses) • highlighting • colored overlays • manually or electronically changing spacing • screen color/contrast adaptations • pictures/graphics • symbols/sign language cues
Enlarges text and graphics ❑ Included in the IEP	• large print books • manual hand-held magnifiers • closed circuit television (CCTV) • screen magnifier (placed over computer screen)/large printer • screen enlarging software
Converts text and graphics to speech ❑ Included in the IEP	• talking dictionary (to "pronounce" difficult words) • tape recorder or talking books • "talking" word process (to "read" specific words or all electronic text) • screen reading system (to "read" text–may need to be scanned into electronic format) • video description (verbal description of visual information conveyed in videotapes, TV, etc.)
Converts text and graphics to Braille or other tactile symbols ❑ Included in the IEP	• Braille translation software and Braille printer • refreshable Braille computer output • tactile graphic display systems (NOMAD, etc.)
Provides assistive technology services ❑ Included in the IEP	• Training on technical assistance for individuals • Training on technical assistance for families • Training on technical assistance for professionals/ paraprofessionals

Assistive technology is not included in the IEP. Reading needs are addressed by:

- ❑ Instructional and/or therapeutic intervention to remediate skill deficits
- ❑ Instructional and/or therapeutic intervention to develop compensatory skills
- ❑ Adaptation of tasks and/or task expectations
- ❑ Use of human assistance (paraprofessional, peer assistance, etc.)

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❑ WRITING is addressed in the IEP. Consider assistive technology that:

Enhances standard writing utensils and supports ❑ Included in the IEP	• adaptive grip, larger size, wide marking or other adapted writing utensils • splints, wrist supports, etc. • special paper (wider lines, raised lines, etc.) • writing guides, signature guides, etc. • slanted, larger, or no-slip writing surface
Replaces standard writing utensils and supports with alternative ❑ Included in the IEP	• typewriter • electronic notetaker, portable word processor with standard keyboard (AlphaSmart, Type N Speak, etc.) • electronic notetaker with Braille input • computer with standard keyboard/pointing device • computer with keyboard enhancements or adjustments (keyguard, repeat rate adjustment, etc.) • computer with alternative keyboard/pointing device (on-screen keyboards, adaptive keyboards, trackballs, keyboard emulation • computer with switch, scanning, code or other alternative direct selection input devices word prediction and macros to reduce keystroke input • computer with voice dictation input
Enhances the composition of written expression ❑ Included in the IEP	• dictionary and thesaurus (print or electronic, electronic may be "talking) • word processing with spell checker, grammar checker, etc. (may be talking) • abbreviation/explanation and word prediction (to facilitate composition content and input speed) • voice dictation input (to facilitate composition content and input speed) • Multi-media software to (facilitate expression through multiple sensory channels)
Provides assistive technology services ❑ Included in the IEP	• Training on technical assistance for individuals • Training on technical assistance for families • Training on technical assistance for professionals/ paraprofessionals

Assistive technology is not included in the IEP. Writing needs are addressed by:

- ❑ Instructional and/or therapeutic intervention to remediate skill deficits
- ❑ Instructional and/or therapeutic intervention to develop compensatory skills
- ❑ Adaptation of tasks and/or task expectations
- ❑ Use of human assistance (paraprofessional, peer assistance, etc.)

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❑ MATH is addressed in the IEP. Consider assistive technology that:

Replaces mental calculations with mechanical or electronic ❑ Included in the IEP	• abacus • calculator with print output • "talking" calculator with speech output • calculator with large print LCD display • calculator with large keypad • "on screen" calculator with computer input and/or output adaptations
Adapts measuring devices (ruler, thermometer, clock, watches, etc.) ❑ Included in the IEP	• measuring devices with speech output • measuring devices with large print or LCD display • measuring devices with tactile output
Provides assistive technology services ❑ Included in the IEP	• Training on technical assistance for individuals • Training on technical assistance for families • Training on technical assistance for professionals/ paraprofessionals

Assistive technology is not included in the IEP. Math needs are addressed by:
- ❑ Instructional and/or therapeutic intervention to remediate skill deficits
- ❑ Instructional and/or therapeutic intervention to develop compensatory skills
- ❑ Adaptation of tasks and/or task expectations
- ❑ Use of human assistance (paraprofessional, peer assistance, etc.)

❑ STUDY SKILLS are addressed in the IEP. Consider assistive technology that:

Enhances or supplements study and organizational skills ❑ Included in the IEP	• picture or picture schedule • visual organizers (color coded tabs and folders, color coded highlighters, etc.) • electronic organizers • speech output devices that provide verbal reminders for assignments, sequence of task, etc. • software to support organization of ideas and studying
Provides assistive technology services ❑ Included in the IEP	• Training on technical assistance for individuals • Training on technical assistance for families • Training on technical assistance for professionals/ paraprofessionals

Assistive technology is not included in the IEP. Study skills are addressed by:
- ❑ Instructional and/or therapeutic intervention to remediate skill deficits
- ❑ Instructional and/or therapeutic intervention to develop compensatory skills
- ❑ Adaptation of tasks and/or task expectations
- ❑ Use of human assistance (paraprofessional, peer assistance, etc.)

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❑ SPEECH/LANGUAGE or ORAL EXPRESSION is addressed in the IEP. Consider assistive technology that:

Enhances speech production ❑ Included in the IEP	• speech amplifier • speech clarifier
Supplements/replaces speech production with text, pictures, or graphics that communicate ❑ Included in the IEP	• communication board/book • typewriter • text display or print output electronic notetaker, portable word processor, computer, or communication device
Supplements/replaces speech production with alternative speech ❑ Included in the IEP	• artificial larynx • tape recorded speech output communication devices with variable input options and range of number of messages that can be recorded, stored and retrieved • computer generated speech output communication devices with variable input options and text to speech capacity
Provides assistive technology services ❑ Included in the IEP	• Training on technical assistance for individuals • Training on technical assistance for families • Training on technical assistance for professionals/paraprofessionals

Assistive technology is not included in the IEP. Speech/language needs are addressed by:

- ❑ Instructional and/or therapeutic intervention to remediate skill deficits
- ❑ Instructional and/or therapeutic intervention to develop compensatory skills
- ❑ Adaptation of tasks and/or task expectations
- ❑ Use of human assistance (paraprofessional, peer assistance, etc.)

❑ LISTENING is addressed in the IEP. Consider assistive technology that:

Enhances sound and speech reception (amplifies and/or reduces background noise) ❑ Included in the IEP	• hearing aid • cochlear implant • assistive listening systems (e.g. FM, infrared, induction loop, etc.)
Converts speech to text ❑ Included in the IEP	• captioning of videotapes and TV • computer assisted real-time captioning (CART) • computer assisted notetaking (CAN)
Provides assistive technology services ❑ Included in the IEP	• Training on technical assistance for individuals • Training on technical assistance for families • Training on technical assistance for professionals/paraprofessionals

Assistive technology is not included in the IEP. Listening needs are addressed by:

- ❑ Instructional and/or therapeutic intervention to remediate skill deficits
- ❑ Instructional and/or therapeutic intervention to develop compensatory skills
- ❑ Adaptation of tasks and/or task expectations
- ❑ Use of human assistance (paraprofessional, peer assistance, etc.)

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❑ ORIENTATION, MOBILITY, or AMBULATION is addressed in the IEP. Consider assistive technology that:

Enhances orientation, mobility, or ambulation function ❑ Included in the IEP	• corrective lenses (eyeglasses) • white cane/electronic sensor cane devices • auditory location signaler systems • tactile signage • grab bars, lever handles, etc. • door opener • splints, canes, walkers, stair glides, ramps, etc. • speech output devices that provide verbal directions
Supplements/replaces orientation, mobility, or ambulation function ❑ Included in the IEP	• remote environmental controls • manual or power wheelchair power mobility device (scooter, toy car, etc.)
Provides assistive technology services ❑ Included in the IEP	• Training on technical assistance for individuals • Training on technical assistance for families • Training on technical assistance for professionals/ paraprofessionals

Assistive technology is not included in the IEP. Orientation, mobility, ambulation needs are addressed by:

- ❑ Instructional and/or therapeutic intervention to remediate skill deficits
- ❑ Instructional and/or therapeutic intervention to develop compensatory skills
- ❑ Adaptation of tasks and/or task expectations
- ❑ Use of human assistance (paraprofessional, peer assistance, etc.)

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❑ DAILY LIVING or RECREATION/LEISURE is addressed in the IEP.
Consider assistive technology that:

Enhances or supplements development of daily living skills or leisure activities ❑ Included in the IEP	• adapted eating utensils (e.g. built-up handles, plate guards, straws) • adapted dressing aids (e.g. button holers, sock guides, Velcro closures) • adaptive watches, adaptive clocks and alarms • environmental control units • adaptive driving equipment (e.g. hand controls) • adapted toys, board games, playing cards, etc. • "beeping" balls, bases, Frisbees, etc. • lane guides for track and swimming • adjustable basketball hops wheelchair spoke guards, accessible weight training equipment, hand cycles, etc.
Replaces human functions to allow activity accomplishment ❑ Included in the IEP	• feeding systems • transfer systems
Provides assistive technology services ❑ Included in the IEP	• Training on technical assistance for individuals • Training on technical assistance for families • Training on technical assistance for professionals/ paraprofessionals

Assistive technology is not included in the IEP. Daily living needs are addressed by:

- ❑ Instructional and/or therapeutic intervention to remediate skill deficits
- ❑ Instructional and/or therapeutic intervention to develop compensatory skills
- ❑ Adaptation of tasks and/or task expectations
- ❑ Use of human assistance (paraprofessional, peer assistance, etc.)

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❑ **ACCESS to educational programs (developmental, academic, functional, vocational, or transition) is addressed in the IEP. Consider assistive technology that:**

Provides equal access to curricula media and instruction ❑ Included in the IEP	• adaptive toys (e.g. switch activated, etc.) • page turners, electronic format of print pages/books • alternative format print materials (large print, Braille, electronic, etc.) • adjusted or alternative input and output for computers, electronic and on-line media • telephone access (TTY, VCO, amplified phone, etc.) • adjusted or alternative output for audio-visual media (captioning, video description, amplified audio output, magnified video output, etc.)
Provides equal access to the education environment ❑ Included in the IEP	• physical accessibility of buildings, restrooms, classrooms, library, work space, desks, etc. • emergency signaling systems (visual fire alarms, etc.) • alternative signage (raised lettering, Braille)
Provides assistive technology services ❑ Included in the IEP	• Training on technical assistance for individuals • Training on technical assistance for families • Training on technical assistance for professionals/ paraprofessionals

Assistive technology is not included in the IEP. Access needs are addressed by:

❑ Non-technology adaptation of curricula, media and instruction
❑ Adaptation of tasks and/or task expectations
❑ Use of human assistance (paraprofessional, peer assistance, etc.)

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❑ TRANSITION is addressed in the IEP. Consider assistive technology that:

Enhances or develops independent living skills (see daily living). ❑ Included in the IEP	• (See daily living)
Need for post secondary education, employment ❑ Included in the IEP	• Transfer of device ownership to student/Vocational Rehabilitation • Accessible testing
Enhances employment skills ❑ Included in the IEP	• Adaptive transportation, home/work place modifications • Public transportation, orientation
Involvement of Vocational Rehabilitation ❑ Included in the IEP	• Testing, training, education, job coach
Provides assistive technology services ❑ Included in the IEP	• Training on technical assistance for individuals • Training on technical assistance for families • Training on technical assistance for professionals/ paraprofessionals

Assistive technology is not included in the IEP. Transition needs are addressed by:

- ❑ Instructional and/or therapeutic intervention to remediate skill deficits
- ❑ Instructional and/or therapeutic intervention to develop compensatory skills
- ❑ Adaptation of tasks and/or task expectations
- ❑ Use of human assistance (paraprofessional, peer assistance, etc.)

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Appendix F

UNITED STATES DEPARTMENT OF EDUCATION

THE SECRETARY

October 9, 1997

Dear Colleagues;

I am writing about the importance of having electronic and information technology that is accessible to everyone in schools, including individuals with disabilities.

As you know, President Clinton has made education a top priority for his Administration. One of the President's education initiatives is to bring the power of the information age into all of our schools by connecting every school to the Internet by the year 2000 and by ensuring that every student is technologically literate. Technology enriches education. Children with access to computers and trained teachers can learn faster and learn better. For students with disabilities, technology such as word processing and speech recognition can give them the tools they need to participate fully in challenging academic courses. As the use of technology in all aspects of life has become more prevalent, technology skills have also become a basic requirement, just like reading, writing and math, that every student must master to succeed and be productive. Therefore, it is essential that the technology used in our schools leaves no one behind.

Schools are making large investments in technology as part of their administrative and information systems. In purchasing technology, it is important to incorporate considerations about accessibility for students and employees with disabilities into the decision-making process. It is more cost efficient to consider issues about accessible technology up front, rather than incur the expense of retrofitting or adapting a system or device to make it accessible later.

To assist you as you make decisions about technology purchases, we have enclosed a technical assistance. packet that we hope will be helpful. The packet includes information about the technical aspects of access, legal obligations concerning technology and individuals with disabilities, and a list of resources for further information and assistance.

I hope this information will be useful to you.

Yours sincerely,

Richard W. Riley

Enclosure

600 INDEPENDENCE AVE., SW WASHINGTON, D.C. 20202–0100

Educational Technology: Questions and Answers on Ensuring Access for Individuals with Disabilities

These questions and answers are intended to address areas of interest related to ensuring that technology used in the Nation's schools can effectively be used by students and employees with disabilities. President Clinton has made access to educational technology a primary goal of his Administration. He states, "We know, purely and simply, that every single child must have access to a computer, must understand it, must have access to good software and good teachers and to the Internet, so that every person will have the opportunity to make the most of his or her own life." In helping to make this goal a reality the Department of Education recognizes that technology must be accessible to all children. Commitment to free quality education for all is a fundamental principle of our nation, and knowledge of technology is increasingly essential for life and work. We cannot allow some children to have access and leave others out.

1. How do barriers to educational technology access for students with disabilities differ from access barriers for all other students?

Common barriers to educational technology access for all students include costs associated with obtaining equipment, difficulty connecting rural locations, lack of funding to train personnel to utilize technology, and so on. For students with disabilities, more basic access barriers are encountered in interacting with the educational technology product. Motor disabilities may limit students' ability to use a standard keyboard, the standard monitor display may not be usable by students with visual impairments, and the speech output of an instructional program may not be understood by students with a hearing impairment. Alternative input and output features are frequently needed by students with disabilities to allow them to interact with the educational technology on an equal basis with other students. Such features are critical for educational technology "product access" just as ramps and lever door handles are critical for building access.

2. How can "Product access" for students with disabilities be delivered?

Access for students with disabilities can either be accomplished through built-in features or ones that are added on to the product. Built-in access features are usually more robust, stable, and cost-effective than add-on. Examples of built-in access features would be keyboard adjustments that allow for sequential rather than simultaneous keystrokes and software that provides the capacity to enlarge the visual display to a variety of sizes. Unfortunately, not all access features are available built-in, and as a result, compatibility with add-on access products will also be necessary to assure full access. Examples of compatibility with add-on access products would be the capacity to accept input from alternative keyboards, software that supports the stable operation of "screen-readers," products that transform visual display into speech with additional software, and speech synthesizers.

As the developers of computer hardware and software recognize the benefit that can be derived from all individuals (those with and without disabilities) being able to use the same computer equipment and software applications, the concept of universal design in the development of new products becomes more accepted and built-in access should become more readily available.

3. Do these input and output alternatives help only students with disabilities?

No, many access features provide benefits for individuals without disabilities. Just as curb cuts accommodate individuals pushing shopping carts and baby strollers, in addition to providing access for individuals who use wheelchairs, many educational technology access features support students with a variety of learning needs. Alternative input options allow preschool children to use a computer effectively when they do not yet have the motor skills to use a standard keyboard. Voice output systems not only provide access for individuals who cannot see text on a screen display, but also support effective technology use by individuals with limited reading skills. Text display of speech output can foster literacy development and efforts to learn new languages, in addition to providing access for individuals who cannot hear.

4. What are a school's legal responsibilities to provide accessible technology for students with disabilities?

The Federal laws that govern a public school's obligation to provide accessible technology for individuals with disabilities all seek to ensure that an individual's disability does not prevent him or her from participating in the school's educational program. A public school, and any other recipient of Federal financial assistance, should look to Section 504 of the Rehabilitation Act of 1973, as amended, (Section 504), 29 U.S.C. § 794, with implementing regulations at 34 CFR Part 104. As a public entity, the responsibilities of a school are also governed by Title II of the Americans with Disabilities Act of 1990 (ADA), 42 U.S.C. § 12101, with implementing regulations at 28 CFR Part 35. In addition, the Individuals with Disabilities Education Act (IDEA), which was recently reauthorized on June 4, 1997 as Public Law No. 105–17, and can be found starting at page 37 of Volume. 111 of the Statutes at Large, applies to States, public school districts, and other instrumentalities of the State responsible for educating students with disabilities. Its implementing regulations can be found at 34 CFR Part 300. (Please note that these regulations have not yet been amended to reflect the new statute.)

Students with disabilities must have an equal opportunity to participate in and benefit from a school district's programs and activities. If computer technology is part of a public school's education program, Section 504 and Title II of the ADA require a school to provide students with disabilities with accessible computer hardware and software , so that they are not excluded from the education program. In addition, the computer hardware must be placed in a location that is accessible to students with disabilities. If technology is purchased that cannot be made accessible, it will have to be retrofitted, replaced, or some other adaptation will have to be made so that students with disabilities can have an equal opportunity to participate in the education program. If equal access to an education program can be provided through other means, a particular technology may not need to be fully accessible to every student. However, technology should be readily available that can provide access for individuals with all types of disabilities. Where technology is the "sole provider" of information or services, for example, an electronic library system or a single station that provides Internet access, it must either be accessible or be able to be made accessible in order to provide students with disabilities with an equal opportunity to participate in the education program.

In addition, the ADA requires public elementary and a secondary school to take appropriate steps to ensure that communication with individuals with disabilities are as effective as communication with others. Communication in the context of information technology means the transfer of information through computers, including the resources of the Internet. A school is required to provide appropriate auxiliary aids and services where necessary to ensure effective

communication for individuals with disabilities. They are also required to make reasonable modifications in policies, practices or procedures when the modifications are necessary to avoid discrimination on the basis of disability. When making purchases and when selecting its resources, a school has a duty to solve barriers to information access that the school's purchasing choices create. Under certain circumstances, a school may not be required to take an action that it can demonstrate would result in a fundamental alteration in the nature of the program or in undue financial and administrative burdens. However, if a school selects software and/or hardware that are not adaptable for access by individuals with disabilities, the subsequent expense of providing access is not counted in determining an undue burden to the extent such cost could have been significantly reduced by considering the issue of accessibility at the time of the initial selection.

If accessible computer technology or a particular assistive technology device or service is necessary for the provision of a free appropriate public education (FAPE) to students with disabilities, Section 504, Title II of the ADA and the IDEA require a school to provide that technology. The undue burden analysis described above does not apply when a student needs technology as a part of his or her entitlement to FAPE. The recent amendments made to IDEA by Pub. L. 105-17 require consideration of a student's need for assistive technology through the individualized education program (IEP) process. Therefore, individualized determinations regarding technology that a student with a disability may need in order to be provided with FAPE must be made through the process used to develop the student's IEP, and decisions made regarding the child's use of technology should be included in the IEP. For students with disabilities not receiving services under the IDEA, but covered under Section 504, a student's need for assistive technology is considered as part of determining the appropriate educational and related services that will be provided to meet the individual educational needs of that student as adequately as the needs of students who are not disabled.

5. What are a school's legal responsibilities to provide accessible technology for employees with disabilities?

As with students, a school must make its technology systems and computer hardware and software accessible where necessary to ensure that it does not discriminate against its employees with disabilities in the terms and conditions of their employment. Section 504, Subpart B contains employment requirements that apply to a public school, and other recipients of Federal financial assistance. Title I and Title II of the ADA contain employment requirements that apply to a public school, regardless of whether it receives Federal financial assistance. (Note that Section 504 has been amended to incorporate the Title I employment standards.) A school cannot discriminate against an employee based on his or her disability ; and if job applicants, teachers, and other employees use technology provided by the school, the school must make that technology accessible so that employees with disabilities are not denied opportunities based on their disabilities.

Particular assistive technology or access to standard technology may also be needed by employees with disabilities as a reasonable accommodation. An employer need not provide a specific accommodation that is requested by an applicant or employee if an alternative means of accommodation that is less costly, but effective, is available. For example, although an individual with low vision may request a large computer monitor that would enable the individual to better view information on the computer screen, there may be situations in which an employer my not have to provide that monitor if a less expensive screen enlargement software can provide the same level of access to on-screen materials for that individual. Also, if an employer can demonstrate that a requested accommodation would impose an undue hardship on the employer, it need not be provided. However, if the originally requested accommodation would impose an undue hard-

ship, the employer must consider carefully whether another accommodation exists that would not result in an undue hardship. These determinations are fact-specific and would have to be made on a case-by-case basis. For further information on these employment requirements you may want to look at the ADA. Title I regulations which are found at 29 CFR Part 1630.

6. What is a State's responsibility as a recipient of funds made available under the Technology Related Assistance for Individuals with Disabilities Act?

Under the Technology-Related Assistance for Individuals with Disabilities Act of 1988, as amended in 1994 (the Tech Act), the Department of Education provides Federal funding to each State, the District of Columbia, Puerto Rico, and the outlying areas to develop state-wide programs focusing on systemic change and advocacy activities to improve the way individuals with disabilities access assistive technology devices and services, The State, any recipient, and any subrecipient of Federal funds under the Tech Act are required under Section 103 (e) (6) of that Act and 34 CFR §345.31 (d) to submit an assurance to the Department that it will comply with guidelines established under Section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794d). Guidelines for electronic and information technology accessibility are designed to ensure, regardless of the type of medium, that individuals with disabilities can produce information and data, and have access to information and data, comparable to that of individuals who are not disabled. Guidelines currently being used under Section 508 are found in *Managing Information Resources for Accessibility* issued by the General Services Administration's Center on Information Technology Accommodation.[1] This handbook can be found on GSA's web site at http://www.gsa.gov/coca

7. How can a school fund educational technology access for students with disabilities?

Federal funds are currently available to support the purchase of educational technology. These general education technology funds can and should be used to procure accessible educational technology, including technology with built-in access, technology that is compatible with add-on access products, and add-on access products themselves. These Federal funds should not be used to purchase inaccessible technology with the expectation that some "special" funding source has responsibility for making the products accessible. When expending Federal educational technology funds, built-in assess and compatibility with add-on access products should be considered as a condition for product purchase.

[1]Although this handbook refers to the Federal Information Resources Management Regulations, which were eliminated by Congress in 1996 as put of regulatory reform efforts, it is still being used as guidance.

8. How does a school know if educational technology products are fully accessible?

Although there continue to be discussions in the information technology industry and the Federal government regarding the use of an "access seal" or some other access assurance statement in product marketing material, there is currently no obvious way to determine whether an off-the-shelf technology product is accessible. There are no mandated access requirements that educational technology products must meet prior to becoming available for purchase. Many educational technology products on the market today have not been designed to provide or support full access for individuals with disabilities. There is currently no independent review entity that provides buyers with authoritative information regarding the accessibility of educational or other types of technologies or information on how products compare to each other concerning accessibility.

Information on the accessibility of certain products is available, however, from many of the resources listed in response to Question 10 and from the manufacturers themselves. In addition, when a school is procuring computer hardware and software, as well as entire systems of information technology and equipment, a school needs to add access considerations to the list of factors they use to make decisions about the purchase of educational technology, both for off-the-shelf products and for those systems that will be designed or created for a school's use. The checklists, guides, and resources enclosed and referenced in this technical assistance packet are intended to provide a school with examples of ways to include accessibility in its technology purchasing decisions. Best practice and common sense would advise that a school procure only products that are or can be made fully accessible. The following resources contain information that can be used to conduct a review of educational technology products for accessibility:

- Access Considerations: QuickList and Reference Notes by the Missouri Assistive Technology Project. This document provides a checklist of access considerations in technology purchases and an explanation of computer hardware and software features that affect access for individuals with disabilities.

- The U.S. Department of Education's *Requirements for Accessible Software Design* (document follows this letter). These requirements, adopted into the Department's contracts for software procurement, provide functional specifications that if included in software design, will ensure minimum accessibility for individuals with disabilities. The requirements can also be found on the Department's web site at http://www.ed.gov/offices/OCIO/asstech/assi.html or at http://gcs.ed.gov.coninfo/clibrary/software.htm.

The proposed *Telecommunications Act Accessibility Guidelines* developed pursuant to Section 255 of the Telecommunications Act of 1996, by the United States Architectural and Transportation Barriers Compliance Board (the Access Board), on April 18, 1997, also provide an example of how to convey a school's technology accessibility needs to vendors and to procurement personnel. These guidelines include requirements for telecommunications product accessibility that are functionally based and include requirements for compatibility with add-on access products. The proposed guidelines have been issued for public comment. The final version of the guidelines will be published in the *Federal Register* and posted on the Access Board's web site (http://www.access-board.gov/) as soon as the Access Board finishes review of the comments submitted by the public. Another source for accessibility guidelines that can be used in the procurement process is the handbook, *Managing Information Resources for Accessibility* by the General Services Administration's Center on Information Technology Accommodation, which includes sample accessibility clauses for technology procurement contracts, and can be found on GSA's web site (http://www.gsa.gov/coca).

9. How can a school implement accessibility considerations when purchasing?

A number of techniques can be used to ensure that educational technology products or systems provide the accessibility a school needs. Products and/or product specifications can be directly reviewed by school staff. This review can be done by staff who have familiarity with the access standards and may entail pooling the expertise of special educators and educational technology specialists. Community resources and individuals who are users of adaptive technology and are familiar with access features can be asked to assist in product reviews. In addition, vendors can be asked to provide a review of their assist products in reference to the access standards, to demonstrate how their products conform to the access standards, or if they do not conform, to show how they can be modified or adapted to be made accessible. Asking vendors to review or demonstrate the accessibility of their products provides an added benefit of increasing awareness to access issues that can be addressed by the manufacturer during future product development.

10. Where can a school get more assistance?

Provided below are some of the resources that exist to assist a school in addressing the technological and legal issues involved in obtaining and using technology that is accessible to individuals with disabilities.[2]

Organizations That Primarily Address Technological Issues

The assistive technology project in each State, established under the Tech Act, can provide a school with information on the purchase and use of accessible technology. Many States also have regional assistive technology resource centers located within the State. To find out if there is a center near you, call your State's Tech Act project. In States where no Information and Referral contact person is listed, the Project Director can assist you.

ALABAMA STATEWIDE TECHNOLOGY ACCESS AND RESPONSE
PROJECT (STAR) SYSTEM FOR ALABAMIANS WITH DISABILITIES
2125 East South Boulevard
P.O. Box 20752
Montgomery, AL 36120-0752
Project Director: Dr. Tom Gannaway
Telephone: (334) 613-3480 or (800) STAR656 (In-State only); Fax: (334) 613-3485
INTERNET: http://www.mindspring.com/~alstar
E-mail: alstar@mont.mindspring.com

ASSISTIVE TECHNOLOGIES OF ALASKA
701 E. Tudor Road, Suite 280
Anchorage, AK 99503-7445
Information and Referral: Rose Foster
Telephone: Voice/TDD (907) 563-0138
Program Director- Michael Shiffer

[2] The information from the organizations listed here, along with other information provided in the technical assistance packet, do not necessarily reflect the views or policies of the Department of Education. Nor does mention of a specific organization, agency, or entity imply endorsement by the Federal government.

Appendix G

REQUIREMIENTS FOR ACCESSIBLE SOFTWARE DESIGN

Version 1. 1

March 6, 1997

Purpose

The Department of Education considers universal accessibility to information a priority for all employees and external customers, including individuals with disabilities. The Department has established these Requirements for Accessible Software Design in order to support its obligation, under Sections 504 and 508 of the Rehabilitation Act of 1973, 29 U.S.C. §§794 and 794d, as amended, to ensure the accessibility of its programs and activities to individuals with disabilities, specifically its obligation to acquire accessible electronic and information technology. Therefore, when selecting computer hardware and software applications for use within the Department's computing environment, the Department will evaluate the hardware and software to determine its accessibility by users with disabilities.

The purpose of this document is to convey the accessibility needs of the Department to the developers and suppliers of computer applications. It addresses the minimum accessibility requirements software applications must meet in order to be used by all Department employees and customers. These requirements are offered to demonstrate the accessibility needs that must be considered when designing and developing software for the Department of Education. They address proven techniques for the design of universally accessible software that can be used by individuals with or without a disability. Software considered for use by the Department must execute in the standard operating environment at the time of offering and be compatible with the accessibility tools, both hardware and software, in use by individuals with disabilities at the Department.

While a product that meets these requirements ensures minimum accessibility for individuals with disabilities, the Department of Education encourages software and technology developers to be creative and maximize their design of software that is universally accessible. More specific recommendations for how to design universally accessible software can be obtained from the Assistive Technology Team in the Office of the Chief Information Officer (OCIO) Technology Center, (202) 708-7298 (voice), (202) 401-85 10 (TTY), Internet: Joe_Tozzi@ed.gov

Functional Specifications

Keyboard Access

1. The software program must provide keyboard access to all functions of the application. All actions required or available by the program must be available with keystrokes. (i.e., keyboard equivalents for all mouse actions including but not limited to, buttons, scroll windows, text entry fields and pop-up menus.)
2. Clear and precise instructions for the use of all keyboard functions shall be provided as part of the user documentation.
3. The software must have a logical tabbing order among fields, text boxes and focal points.
4. The focus must follow the keystroke. (E.g., using the arrow keys to navigate through a list followed by pressing the ENTER key or spacebar to select the desired item.
5. The software shall not interfere with existing accessibility features built into the operating system. (Such as Sticky keys, Slow Keys, Repeat Keys in Microsoft Windows 95.)
6. Avoid using timed responses if possible. If used, the ability to modify the timing parameter, by individual user, is necessary.
7. Selectable visual and auditory indication of key status for the Number Lock, Shift/Caps Lock, and Scroll Lock keys.

Icons

1. All icons shall have clear precise text labels included on the focus or provide a user-selected option of text-only buttons.
2. The use of icons shall be consistent throughout the application.
3. Provide pull-down menu equivalents for Icon functions (menu, tool and format bar).
4. Provide keyboard access to all pull-down menus,
5. Painted text is not accessible to all users. Use system text drawing tools so that screen reader software can interpret the text.

Sounds

1. Provide a visual cue for all audio alerts.
2. Support the Sounds feature where built into the operating system. (Such as Microsoft Windows 95 show sounds feature.)
3. Allow the user to disable or adjust sound volume.
4. Wherever and whenever information is presented in audio format it shall be capable of being displayed by the user in text format, either as closed captioning, a pop-up window, or other means, in parallel with the audio information.

Display

I. Do not use Color-coding as the only means of conveying information or indicating an action. Always provide an alternative or parallel method that can be used by individuals who do not possess the ability to identify colors.
2. The application must support user defined color settings system-wide. Highlighting should also be viewable with inverted colors.
3. Do not use patterned backgrounds behind text or important graphics.
4. Individual user override of application default fonts for printing and text displays are required.
5. Allow user adjustment of, or allow user to disable flashing, rotating or moving displays to the extent that it does not interfere with the purpose of the application.

Field Labeling

1. Position the descriptions or labels for data fields immediately next to the field, so that it is easy for screen reading software, used by individuals that are blind, to associate the labels with the corresponding fields. The preferred position would be flush against the left side of the field with a colon:

Documentation

1. Provide all manuals and documentation in electronic format as an ASCII text file. This should include including text descriptions of any charts and/or graphs or pictures or graphics of any nature. This is done to ensure that the information presented in charts or graphs is available to screen readers and/or in Braille versions of the text.
2. Any reports that the application generates must be available in a "print to ASCII file" format.

Common Accessibility Aids
The Department of Education commonly uses, but is not limited to the following assistive technology aids:

* Artic Technologies Win Vision Screen Reading Software.
* AiSquared Zoom Text for Windows.
* Dragon Systems, Inc. DragonDictate Voice Recognition Software.
* Productivity Plus Word Prediction Software.

This document is available in alternate formats upon request by contacting the Technology Center. 202-401-0028.

* U. S. GOVERNMENT PRINTING OFFICE: 1997-615-217/90362

Appendix H

	Handwriting	Reading	Math	Written Expression	Daily Organization
Instructional Strategies and Task Modifications	**Instructional strategies:** • tracing exercises • "talk through" letter formation • dot-to-dot • multi-modality instruction • chalkboard practice **Task modifications:** • adapt tests to fill-in-the blank, multiple choice, or true-false • provide additional time • shorten assignments • photocopied notes **Also:** • try different writing tools • change paper position • check student position: feet/pelvis/trunk & arm/hand • avoid using short pencils • utilize cross-age tutoring • utilize peer support • provide typing/keyboard instruction • provide instruction on use of specific AT devices	**Instructional strategies:** • use story frame • use before, during, after • echo reading • story mapping • multi-modality teaching • structured study guides **Task modifications:** • highlight key concepts • extra time for completion • shorten assignments • simplify text • use chapter outlines **Also:** • utilize peer support • utilize cross-age tutoring • information organizer • study carrel • provide tactile letters/words • provide instruction on use of AT devices	**Instructional strategies:** • use number lines • use mnemonic devices • use "2-finger" counting aids • use color coding strategies (e.g. green marker to start/red to stop) • use multi-modality apprch • use computational aids **Task modifications:** • reduce the number of problems • eliminate the need to copy problems • enlarge worksheets • avoid mixing "signs" on a page • reduce #of problems on pg. • allow more time **Also:** • utilize peer support • utilize cross-age tutoring • provide instruction on use of AT devices	**Instructional strategies:** • content outlines • "webbing" strategy • process writing strategies • writing/story starters • formulate sentences aloud **Task modifications:** • allow extra time • shorten assignment • provide sentence "shells" • provide key words **Also:** • utilize peer support • utilize cross-age tutoring • study carrel • provide instruction on use of assistive technology devices	**Instructional strategies:** • color coding strategies • homework journal • pocket schedule • notebook schedule • schedule on desk • schedule on bulletin board • assignment sheets • appointment book • reminder cards • structured study guides • post signs & label areas in room **Also:** • utilize peer support • utilize cross-age tutoring • study carrel • organize desk • provide instruction on use of AT devices
Adaptive Assistive Technology (No & Low Tech)	• pencil holders/grips • large/primary pencils • large crayons/markers • different kind/color paper • different line spacing/color • acetate sheets w/markers • light pen • tape paper to the desk • Dycem to hold paper • clipboard to hold paper • stencils/templates • rubber name stamp • other rubber stamps • magnetic board/letters • slant board/easel • wrist rest/support • arm stabilizer/arm guide	• page magnifiers • magnifying bars • colored acetate • word window • flash cards • letter and word cards • sentence cards • highlighter • Post-it tape flags • colored paper clips to mark pages/paragraphs	• abacus • counters-spools, buttons, etc. • containers for counters • manipulatives • flash cards • automatic numberer stamp • magnetic numbers on metal tray • personal chalkboard/dry erase board • raised/enlarged number line • number facts charts	• word cards • sentence cards • pocket dictionary • pocket thesaurus • personal "word" book	• pocket organizer/planner • personal organizer • clipboard • sticky notes • notebook tabs • Post-it tape flags • colored paper clips • highlighter • storage cubicles • timer
Alternative Assistive Technology (Mid-High Tech)	• typewriter/word processor w/correction, w/custom keyguard • portable word processor that interfaces w/computer • computer with macros • computer with spell checker • computer with alternative input (e.g. on-screen keyboard, switch interface, expanded or mini keyboard) • computer with word prediction • computer w/voice recognition	• tape recorder to record reading assignments • "Books on Tape" • Language Master • Speaking Language Master • Word Master • electronic dictionary • computer w/voice output and talking word processing software	• hand held calculator • calculator with printout • talking calculator • Language Master +Math • tape recorder with counting, basic facts, multiplication tables, combinations, formulas	• electronic spell checker • electronic dictionary • electronic thesaurus • Word Master • Speaking Dictionary Companion or Talking Language Master • computer with spelling and grammar checker • computer with macros • computer with word prediction software	• electronic memo/schedule master • electronic pocket organizer planner • taped schedule/assignments • digital diary • computer with calendar/reminder software

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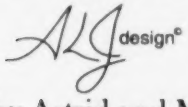

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